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SAMPLES
OF THE
WORK IN DRAWING

OF THE STUDENTS OF
THE INTERNATIONAL CORRESPONDENCE SCHOOLS
SCRANTON, PA.

MECHANICAL DRAWING

THE COLLIERY ENGINEER COMPANY
SCRANTON, PA.



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72761 C 22
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4907

T₃₅₃
T₆₃

PROBLEM 1: To bisect a straight line

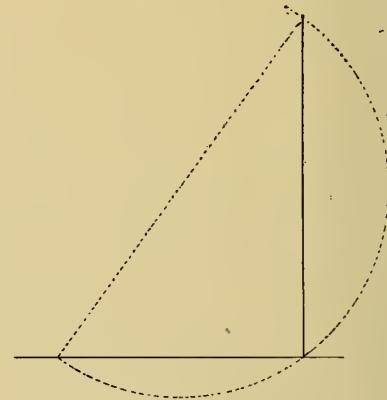
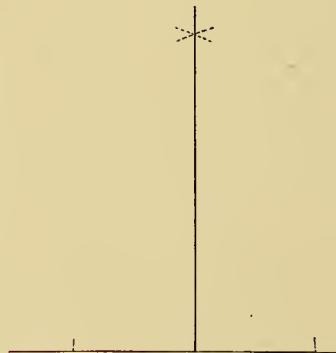
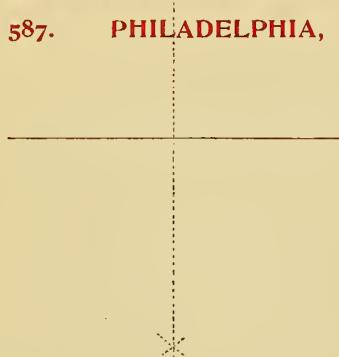
PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line.

CASE I

CASE II

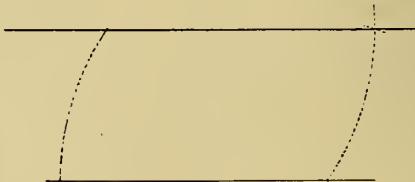
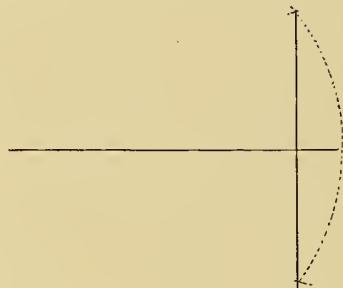
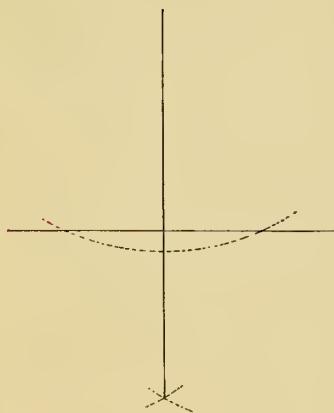
Photograph of Plate Drawn by

Vincent A. Clarke, Machinist, Age 29,
 2705 Berks Street, Fairmont Station,
 C. 587. PHILADELPHIA, PA.



PROBLEM 3: To draw a perpendicular to a straight line from a point without it
 CASE I

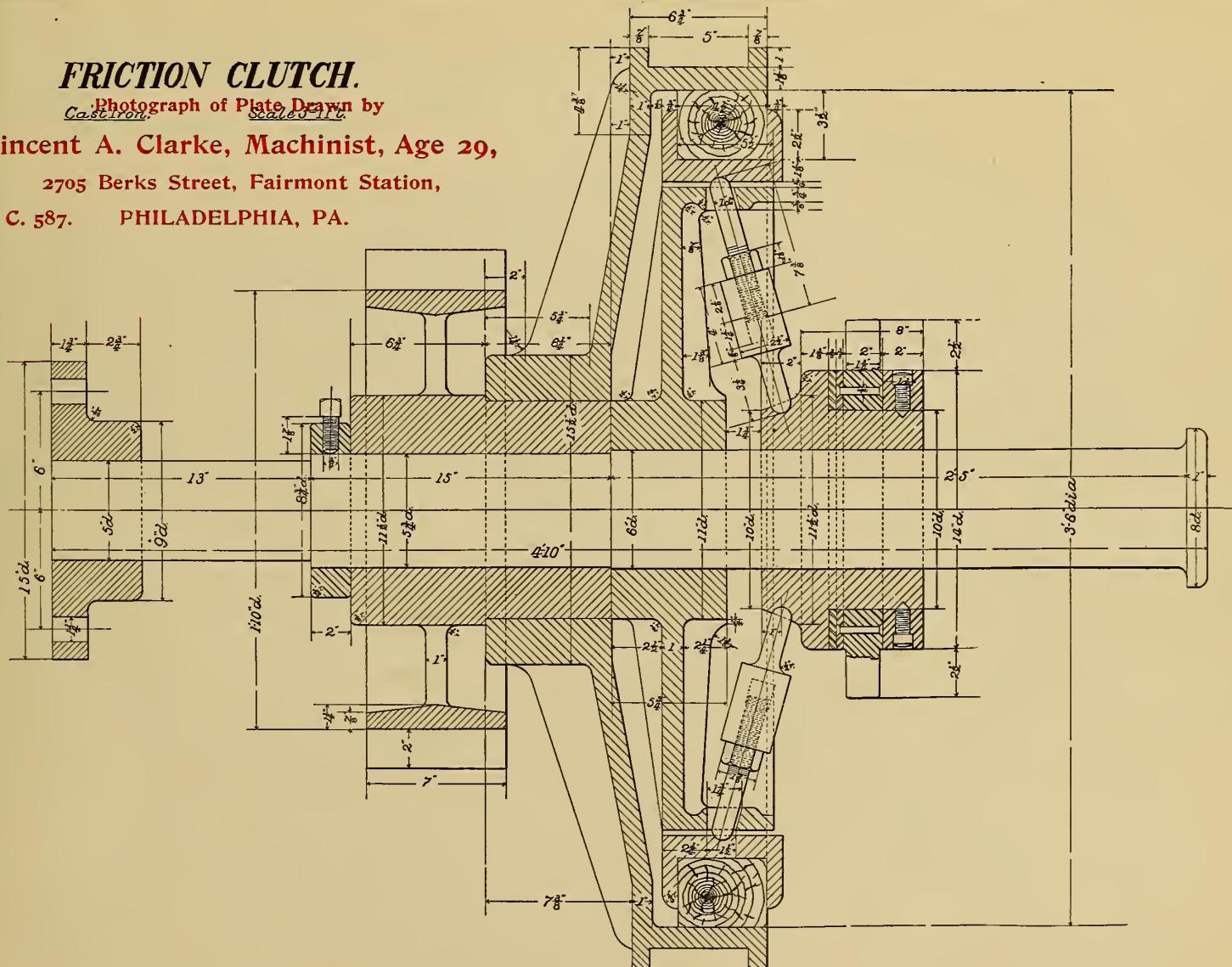
PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line
 CASE II



FRICTION CLUTCH.

Photograph of Plate Drawn by
Castron. Scale 5 ft.

**Vincent A. Clarke, Machinist, Age 29,
2705 Berks Street, Fairmont Station,
C. 587. PHILADELPHIA, PA.**



OCT. 22, 1894.

VINCENT CLARKE CLASS N° C 587

PLATE I

PROBLEM 1: To Bisect a straight line.

PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line.

CASE 1

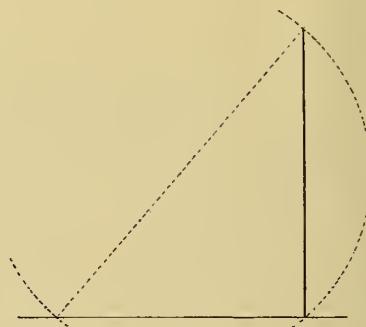
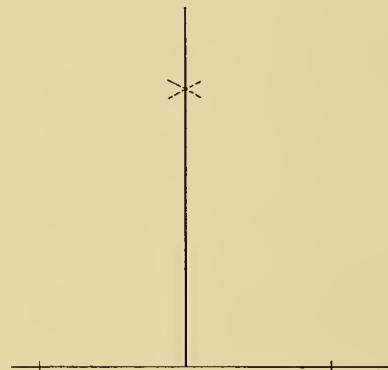
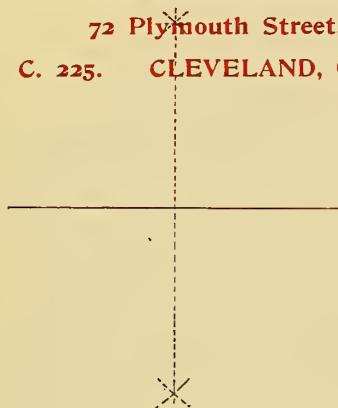
CASE 2

Photograph of Plate Drawn by

E. R. Young, Machinist, Age 25,

72 Plymouth Street,

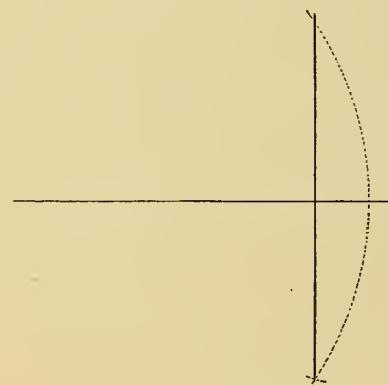
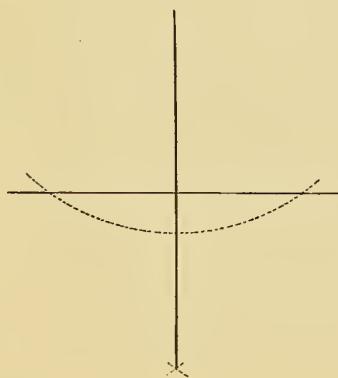
C. 225. CLEVELAND, OHIO.



PROBLEM 3: To draw a perpendicular to a straight line from a point without it

CASE 1

CASE 2



PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line

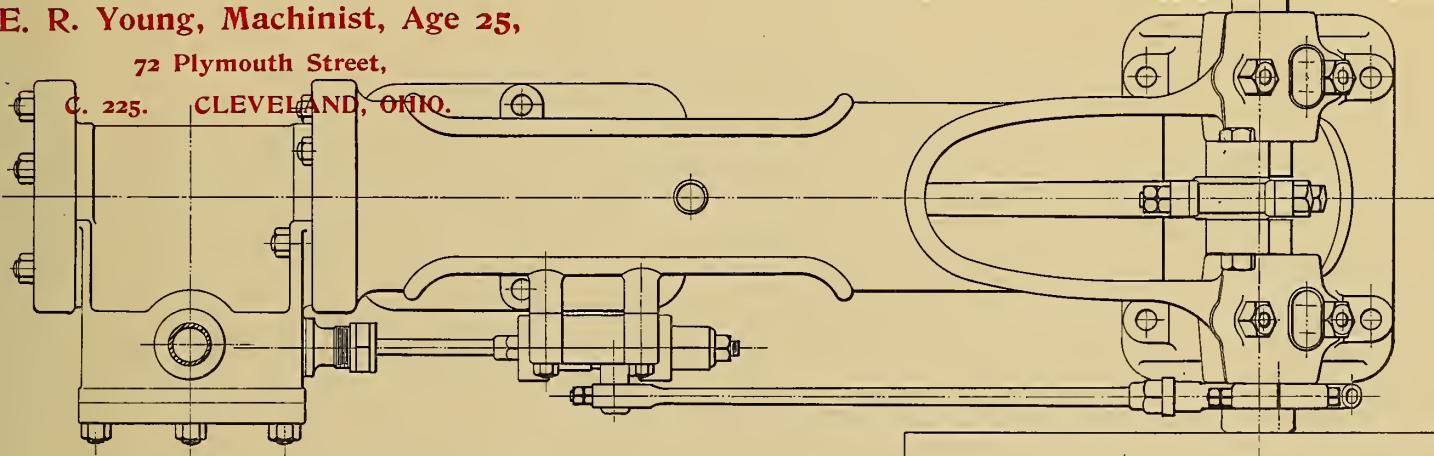


Photograph of Plate Drawn by

E. R. Young, Machinist, Age 25,

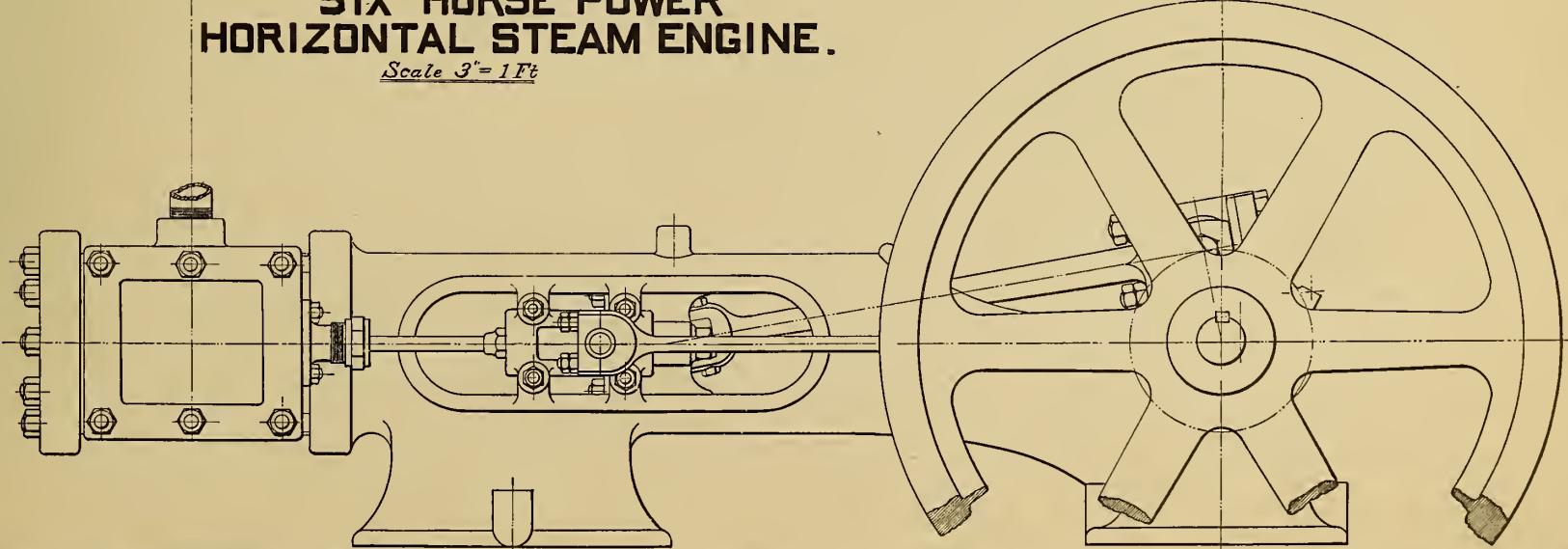
72 Plymouth Street,

C. 225. CLEVELAND, OHIO.



**SIX HORSE POWER
HORIZONTAL STEAM ENGINE.**

Scale 3" = 1 Ft



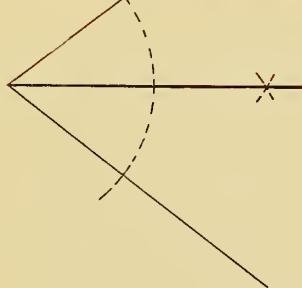
To bisect a given angle.
CASE I.

Photograph of Plate Drawn by

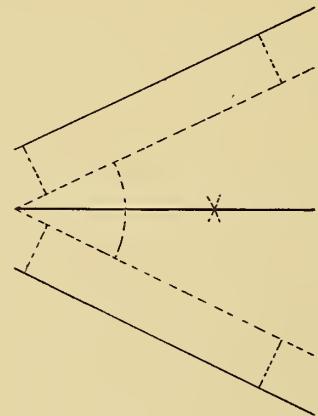
J. F. Johnson, Machinist, Age 28,

46 Catharine Street,

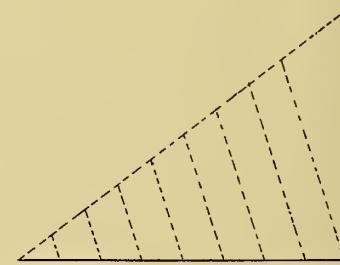
C. 2333. WORCESTER, MASS.



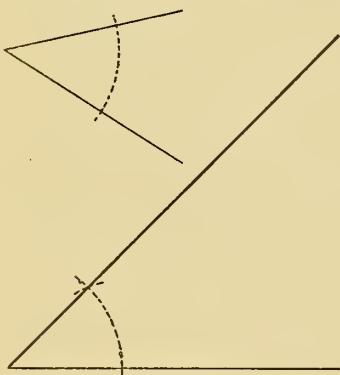
To bisect a given angle
CASE II.



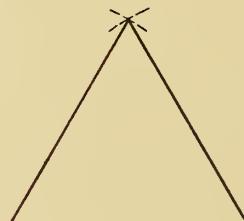
To divide a given straight line, into any required number of equal parts.



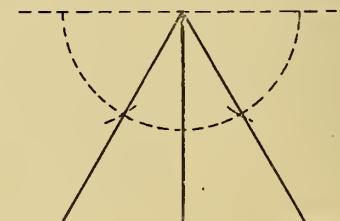
To draw a straight line through any given point on a given straight line to make any required angle with that line:



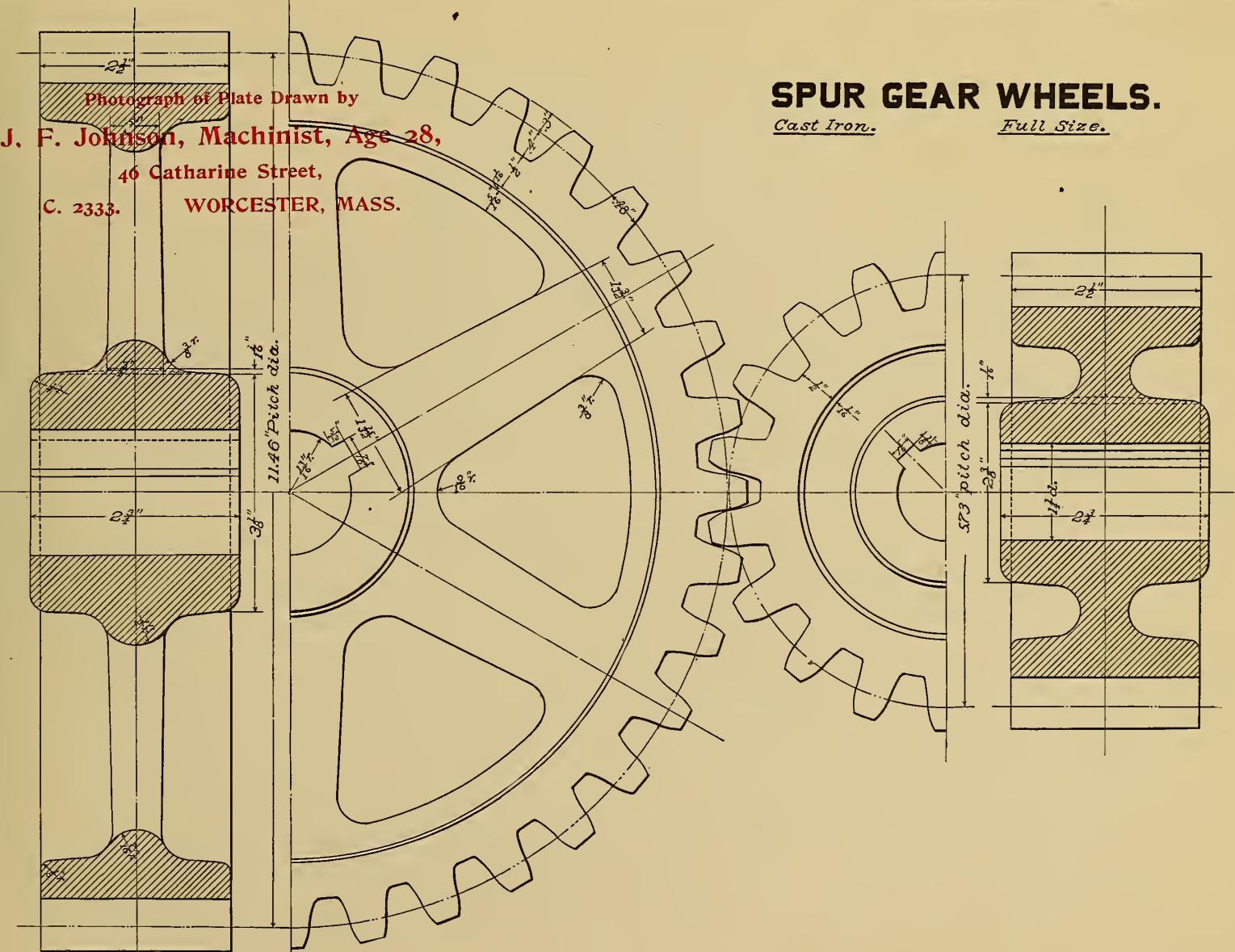
To draw an equilateral triangle, one side being given:



The altitude of an equilateral triangle being given, to draw the triangle:



Photograph of Plate Drawn by
J. F. Johnson, Machinist, Age 28,
 46 Catharine Street,
 C. 2333. **WORCESTER, MASS.**



SPUR GEAR WHEELS.

Cast Iron.

Full Size.

PROBLEM 5. To bisect a given angle
CASE I.

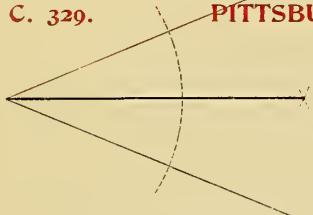
Photograph of Plate Drawn by

J. G. Phillips, Machinist, Age 29,

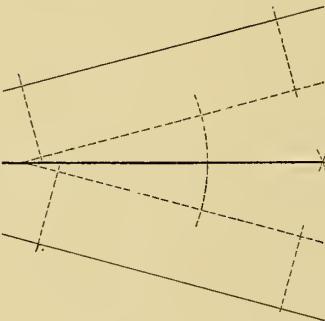
33 Eureka Street,

C. 329.

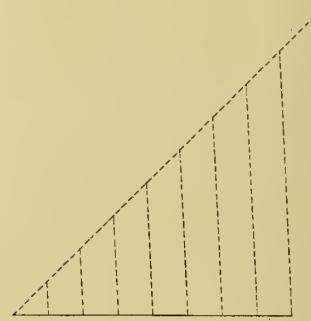
PITTSBURG, PA.



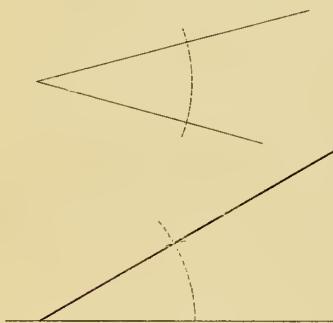
PROBLEM 5. To bisect a given angle
CASE II.



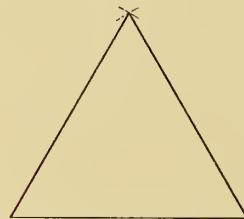
PROBLEM 6. To divide a given straight line into any required number of equal parts.



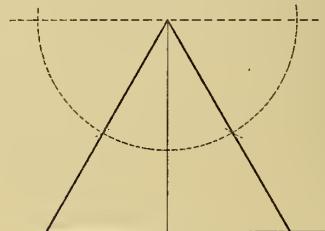
PROBLEM 7. To draw a straight line through any given point on a given straight line to make any required angle with that line.



PROBLEM 8. To draw an equilateral triangle one side being given.



PROBLEM 9. The altitude of an equilateral triangle being given to draw the triangle.



CONNECTING ROD.

Wro't. Iron. Brass Boxes. Babbited.
Scale 3" IFT. Finished.

Photograph of Plate Drawn by

J. G. Phillips, Machinist, Age 29,

33 Eureka Street,

C. 329.

PITTSBURG, PA.

4'-3½"

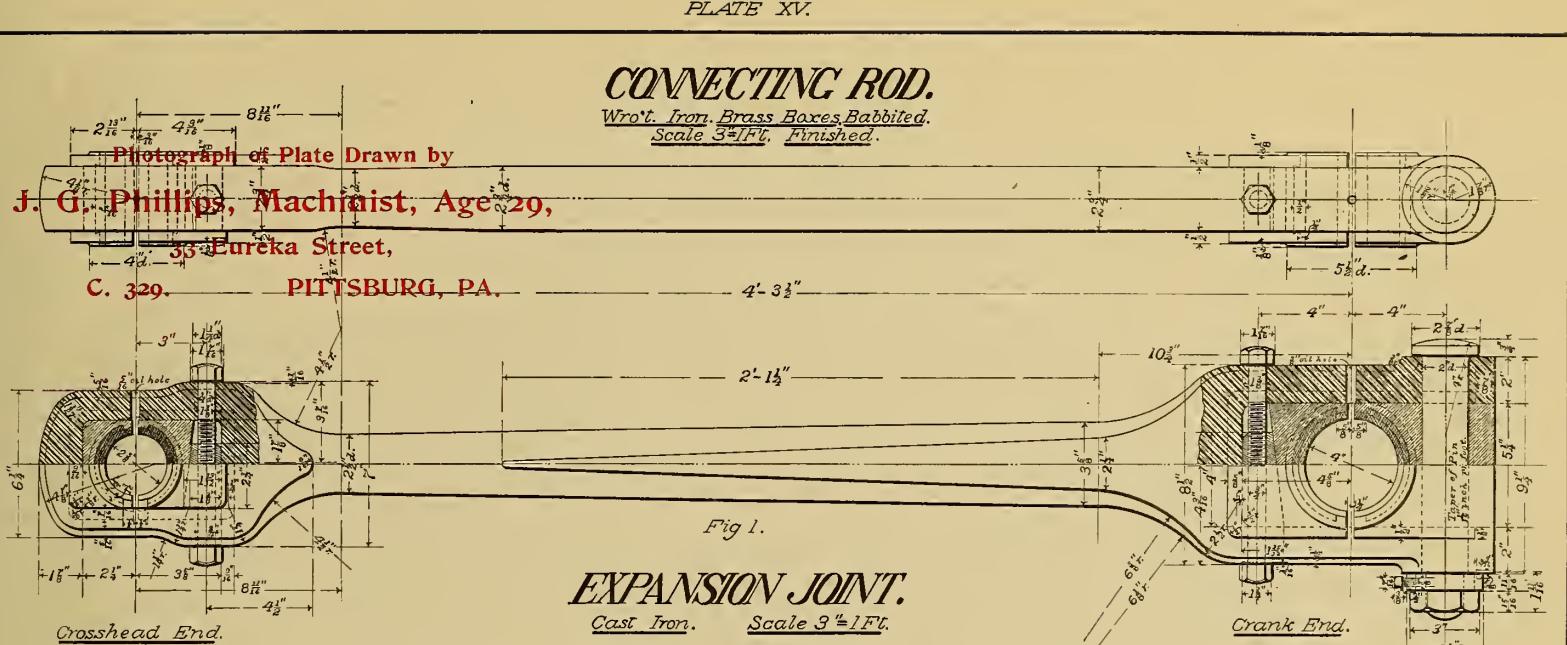


Fig 1.

EXPANSION-JOINT.

Cast Iron. Scale 3"=1Ft.

Crank End.

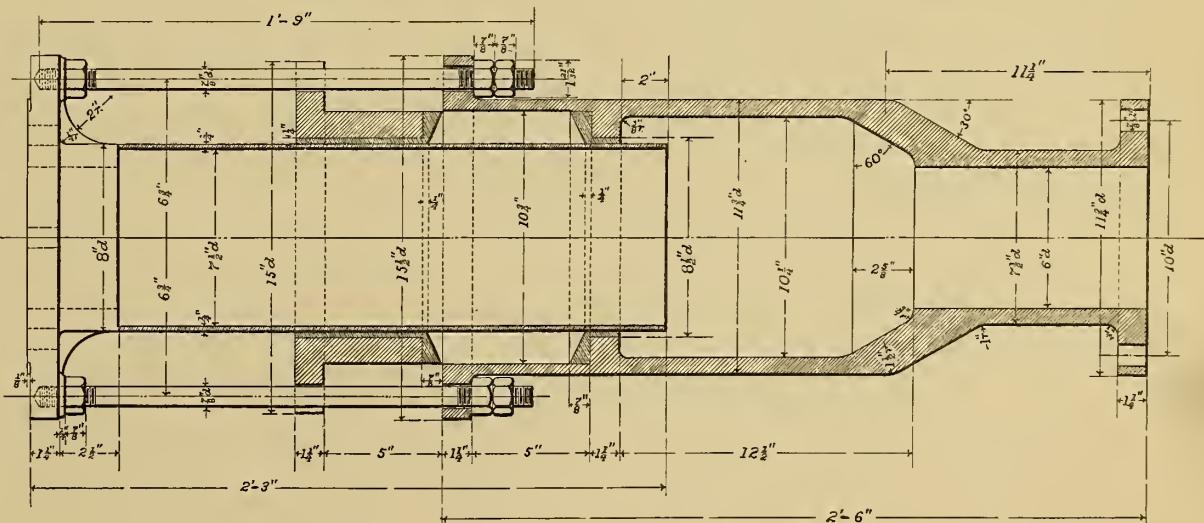


Fig 2.

PROBLEM 1: To bisect a straight line.

PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line.
CASE I.
CASE II.

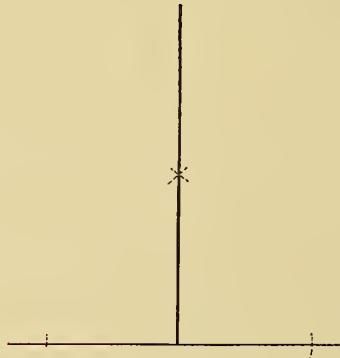
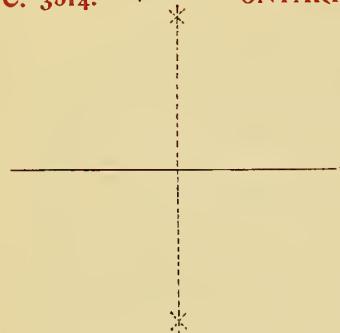
Photograph of Plate Drawn by

John Edgar, Asst. Millwright, Age 17,

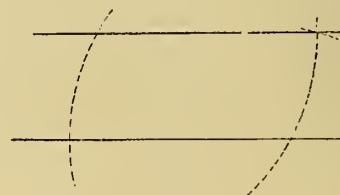
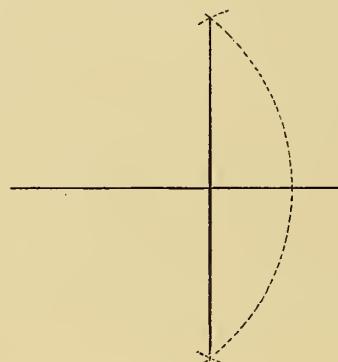
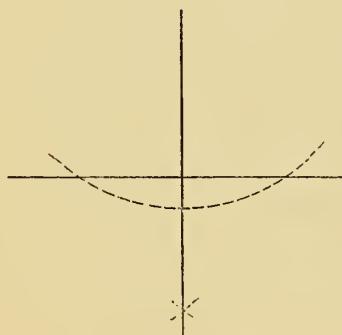
BOX 205, WINDSOR,

C. 3614.

ONTARIO, CANADA.

PROBLEM 3: To draw a perpendicular to a straight line from a without it.
CASE I.

PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line.

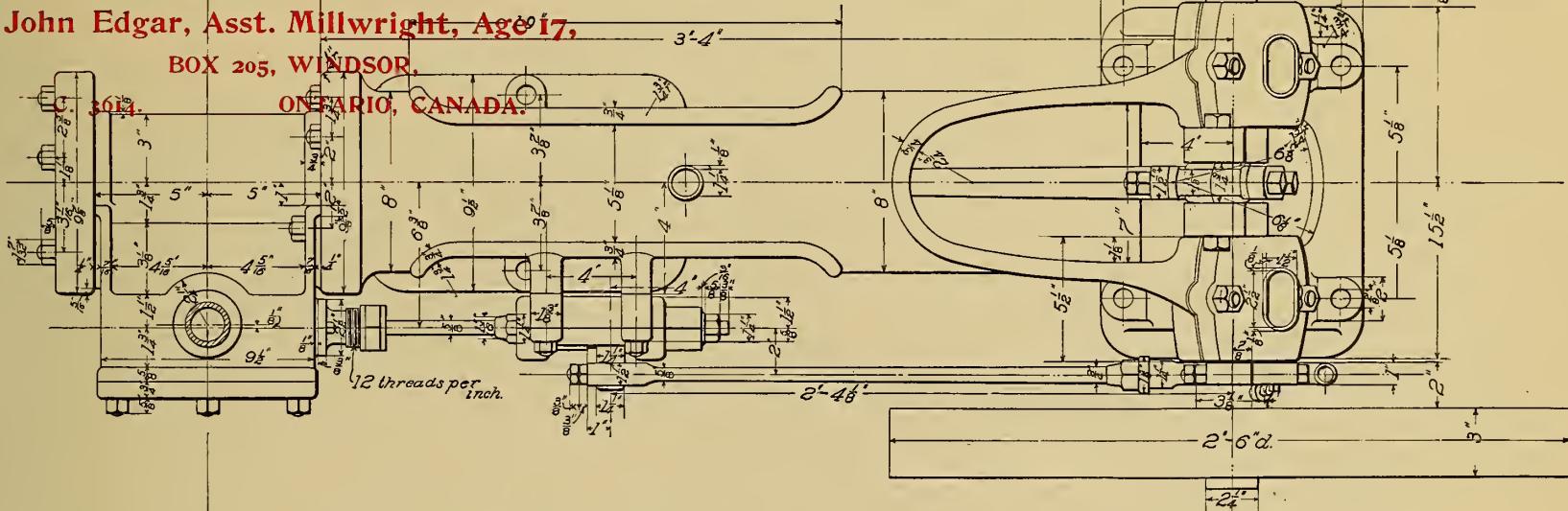


Photograph of Plate Drawn by

John Edgar, Asst. Millwright, Age 17,

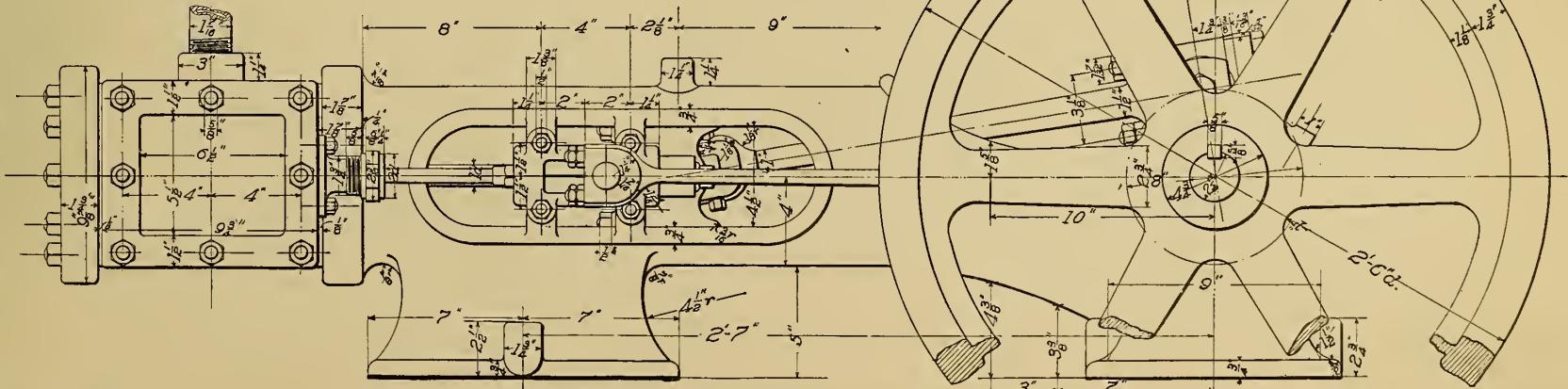
BOX 205, WINDSOR,

ONTARIO, CANADA.



SIX HORSE POWER HORIZONTAL STEAM ENGINE.

Scale = 3" = 1 ft.



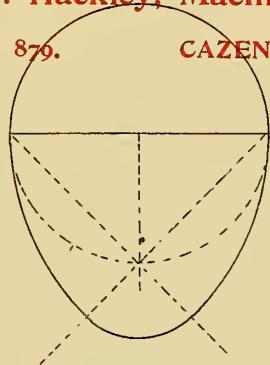
PROBLEM 22. To draw an egg shaped oval.

Photograph of Plate Drawn by

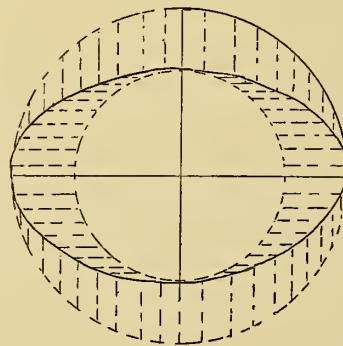
G. T. Hackley, Machinist, Age 16,

C. 879.

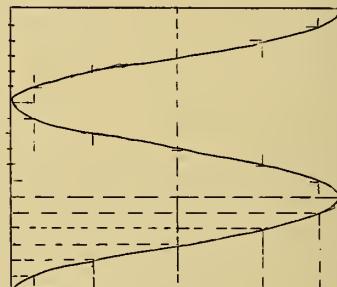
CAZENOVIA, N. Y.



PROBLEM 23. To draw an ellipse the diameters being given.



PROBLEM 26. To draw a helix, the pitch and the diameter being given



PROBLEM 24. To draw an ellipse with circular arcs.

PROBLEM 25. To draw a parabola, the axis and longest double ordinate being given.

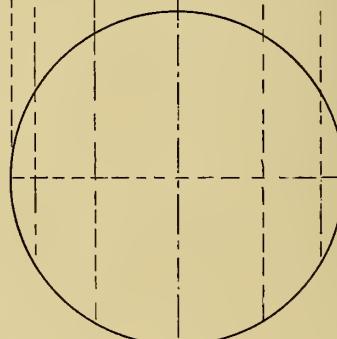
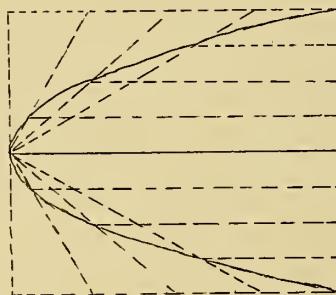
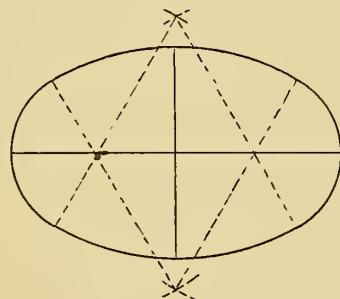
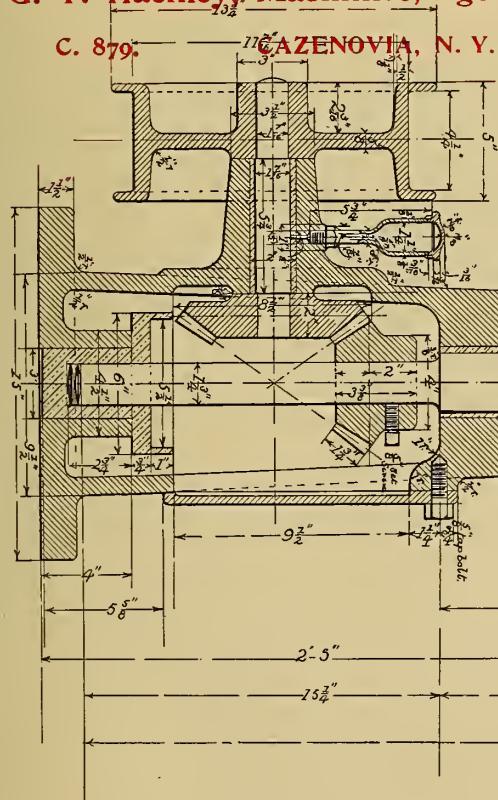


PLATE XXIV.

Photograph of Plate Drawn by

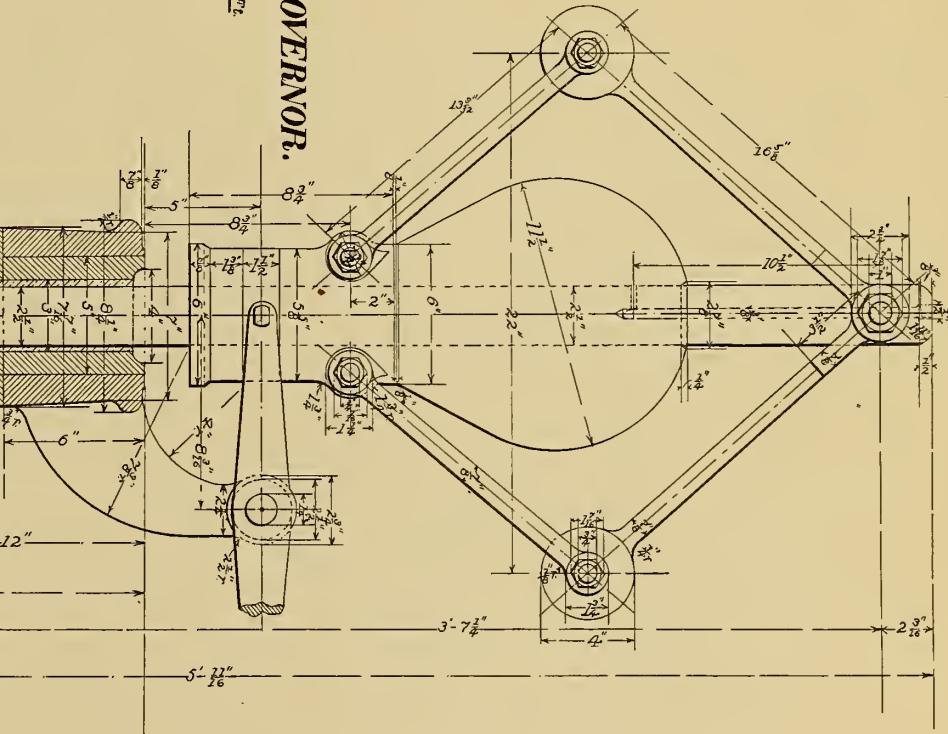
G. T. Hackley, Machinist, Age 16,

C. 879. — — — — — ¹⁷² CAZENOVIA, N. Y.



WEIGHTED GOVERNOR.

Scale 3" = 1 Ft.



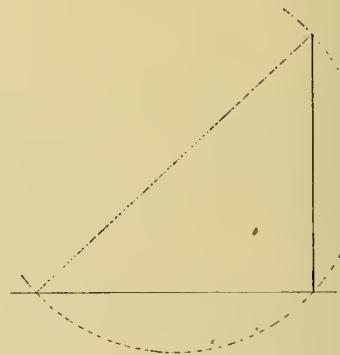
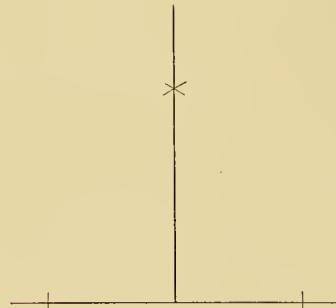
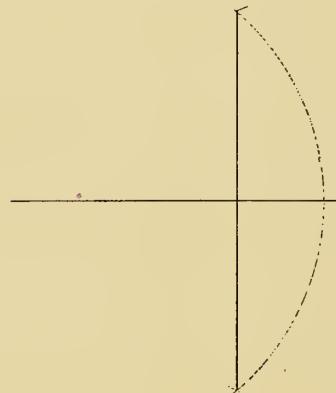
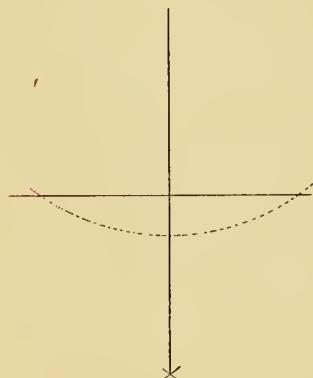


PROBLEM 1: To bisect a straight line

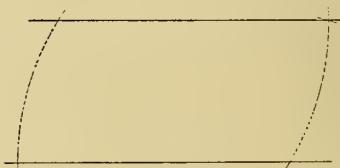
PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line
CASE I. CASE II.

Photograph of Plate Drawn by

George Fouts, Carpenter, Age 30,
520 Moxahala Avenue,
C. 68. ZANESVILLE, OHIO.

PROBLEM 3: To draw a perpendicular to a straight line from a given point without it
CASE I. CASE II.

PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line



Photograph of Plate Drawn by

George Fouts, Carpenter, Age 30,

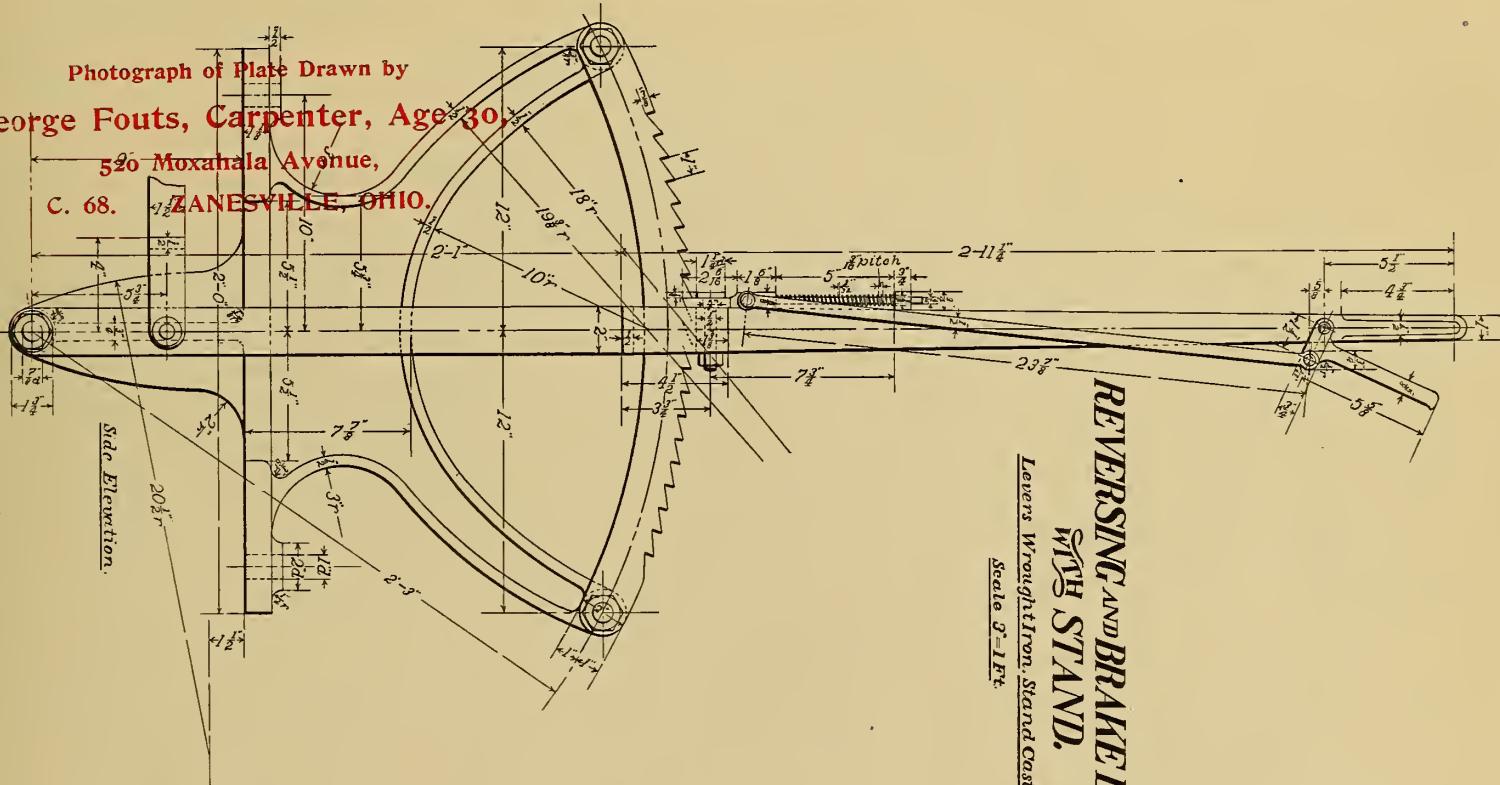
520 Moxahala Avenue,

C. 68. ~~ZANESVILLE, OHIO~~

100

Side Elevation.

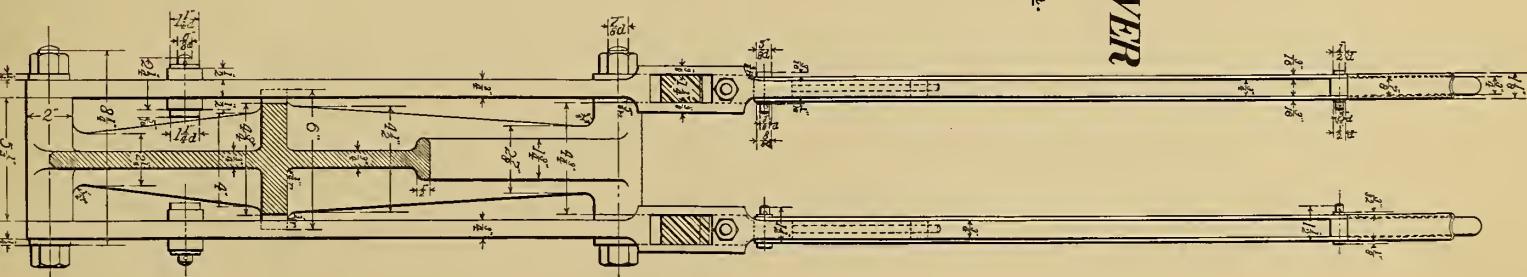
18



REVERSING AND BRAKE LEVER SAFETY CHART

Levers Wrought Iron. Stand Cast Iron.

Scale 3° = 1 Ft.



PROBLEM 1: To bisect a straight line.

PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line.
CASE I.

CASE II.

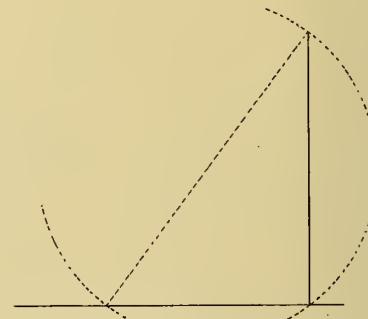
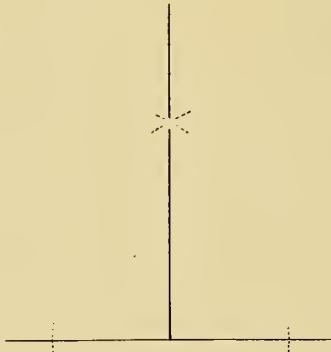
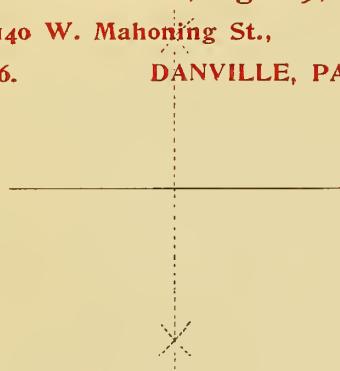
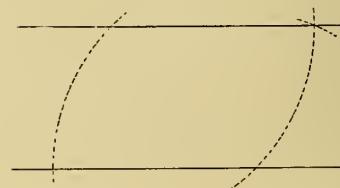
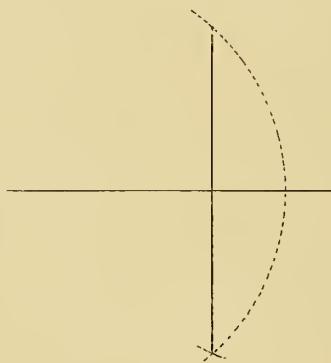
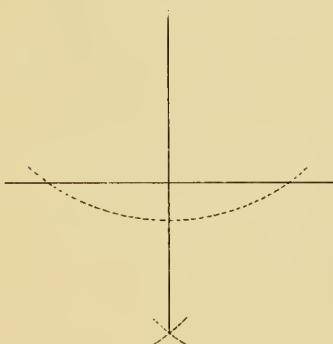
Photograph of Plate Drawn by

C. W. Johnson, Age 19,

140 W. Mahoning St.,

C. 2666.

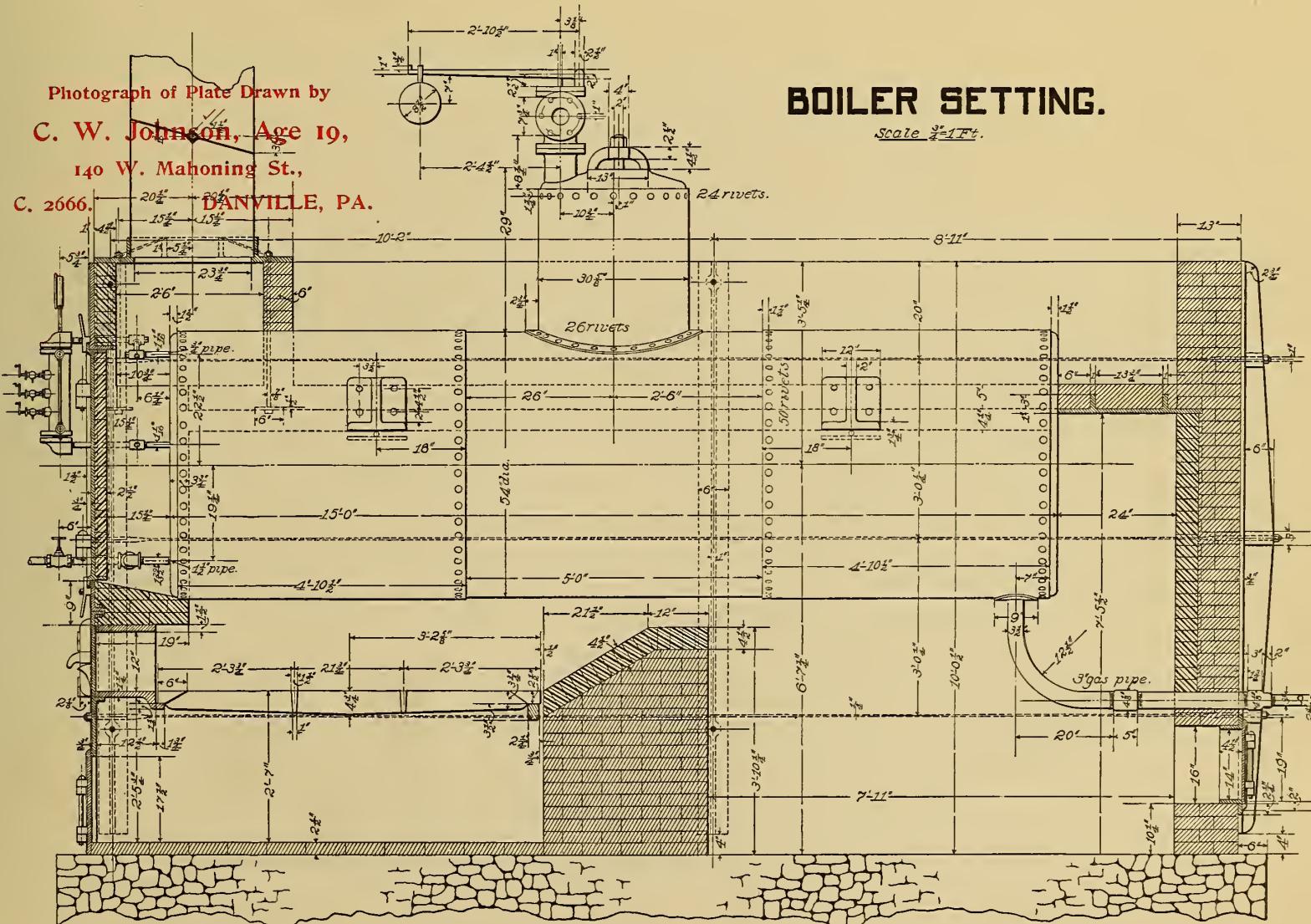
DANVILLE, PA.

PROBLEM 3: To draw a perpendicular to a straight line from a point without it
CASE I.PROBLEM 4: Through a given point to draw
a straight line parallel to a given straight line.

Photograph of Plate Drawn by
C. W. Johnson, Age 19,
140 W. Mahoning St.,
C. 2666. $20\frac{1}{2}^{\circ}$ $20\frac{1}{2}^{\circ}$ **DANVILLE, PA.**

BOILER SETTING.

Scale $\frac{3''}{1}$ = 1 FT.



MAR. 21, 1896.

C.W.JOHNSON, CLASS N^o C2666.



PLATE I

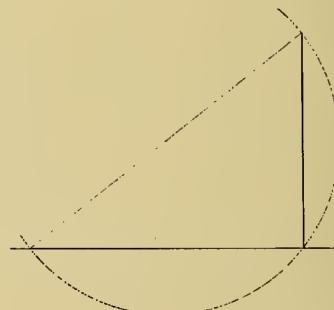
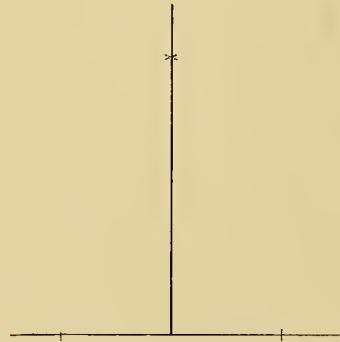
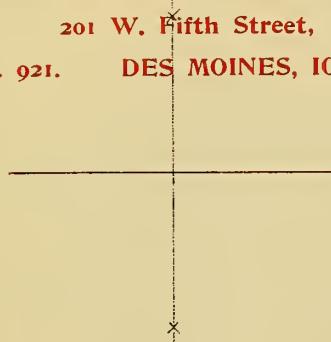
PROBLEM 1: To bisect a straight line.

PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line.

CASE I

CASE II

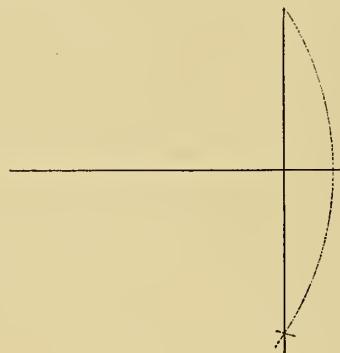
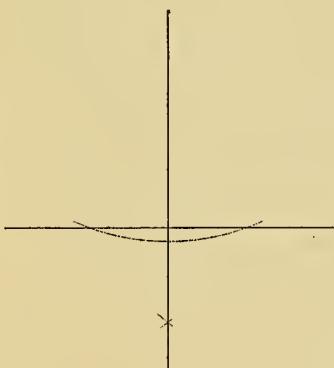
Photograph of Plate Drawn by
James Barels, Printer, Age 24,
201 W. Fifth Street,
C. 921. DES MOINES, IOWA.



PROBLEM 3 To draw a perpendicular to a straight line from a point without it.

CASE I

CASE II



PROBLEM 4 Through a given point to draw a straight line parallel to a given straight line.

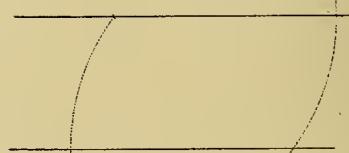
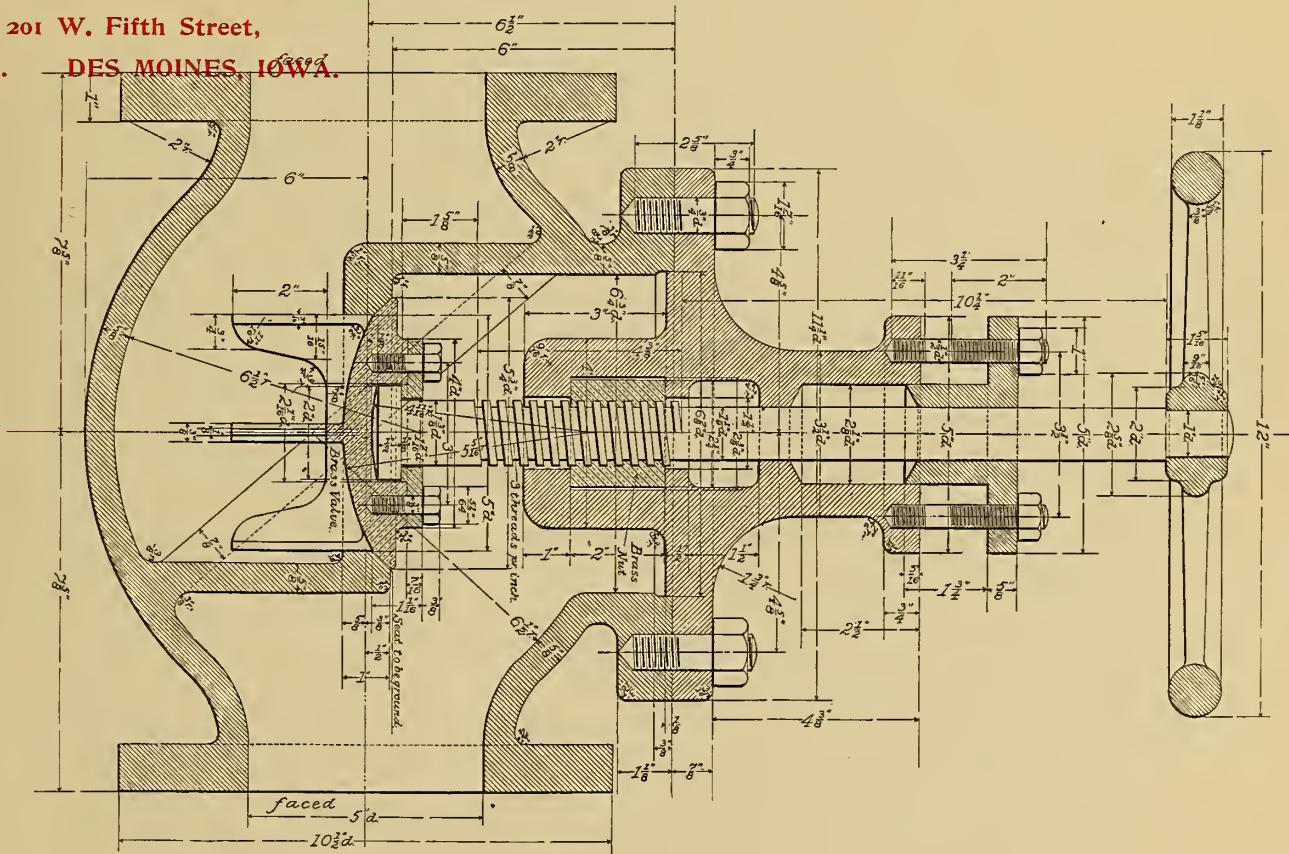


PLATE XVII.

5 INCH GLOBE VALVE.

Cast Iron

Half Size



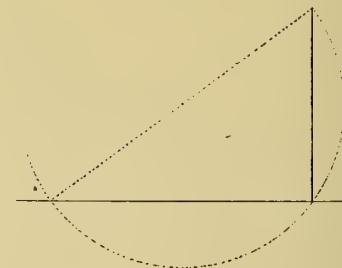
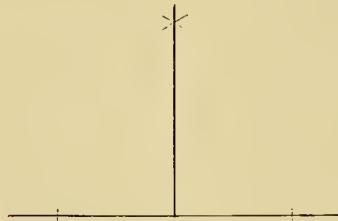
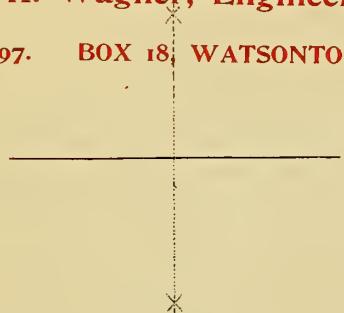
PROBLEM I: To bisect a given straight line

PROBLEM To draw a perpendicular to a straight line from a given point in that line.
CASE I
CASE II.

Photograph of Plate Drawn by

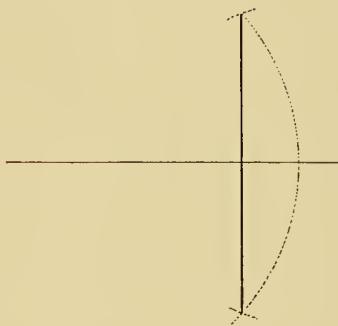
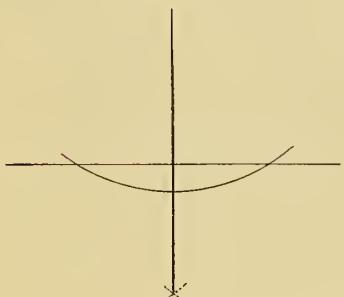
Geo. K. Wagner, Engineer, Age 22,

C. 97. BOX 18, WATSONTOWN, PA.



PROBLEM 3: To draw a perpendicular to a straight line from a given point without it,
CASE I
CASE II

PROBLM 4: Through a given point to draw a straight line parallel to a given straight line





Photograph of Plate Drawn by

O. S. PIKE, Farmer, Age 25,

C. 1548.

NEW LISBON, OHIO.

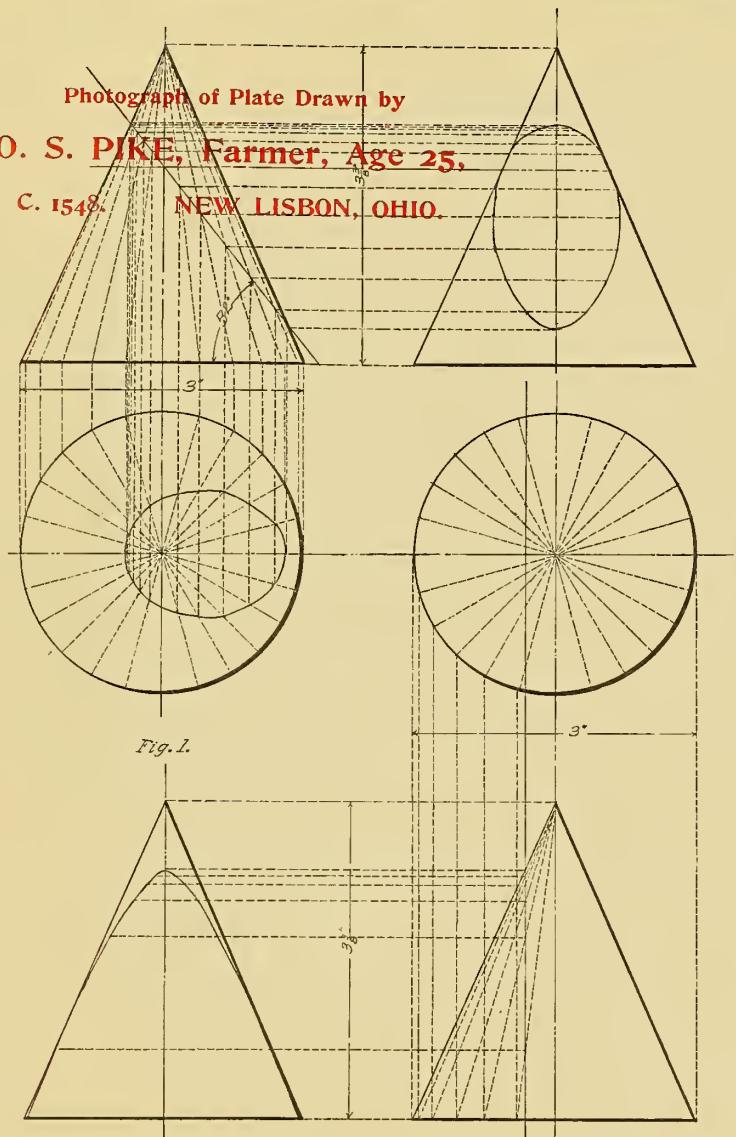


Fig. 1.

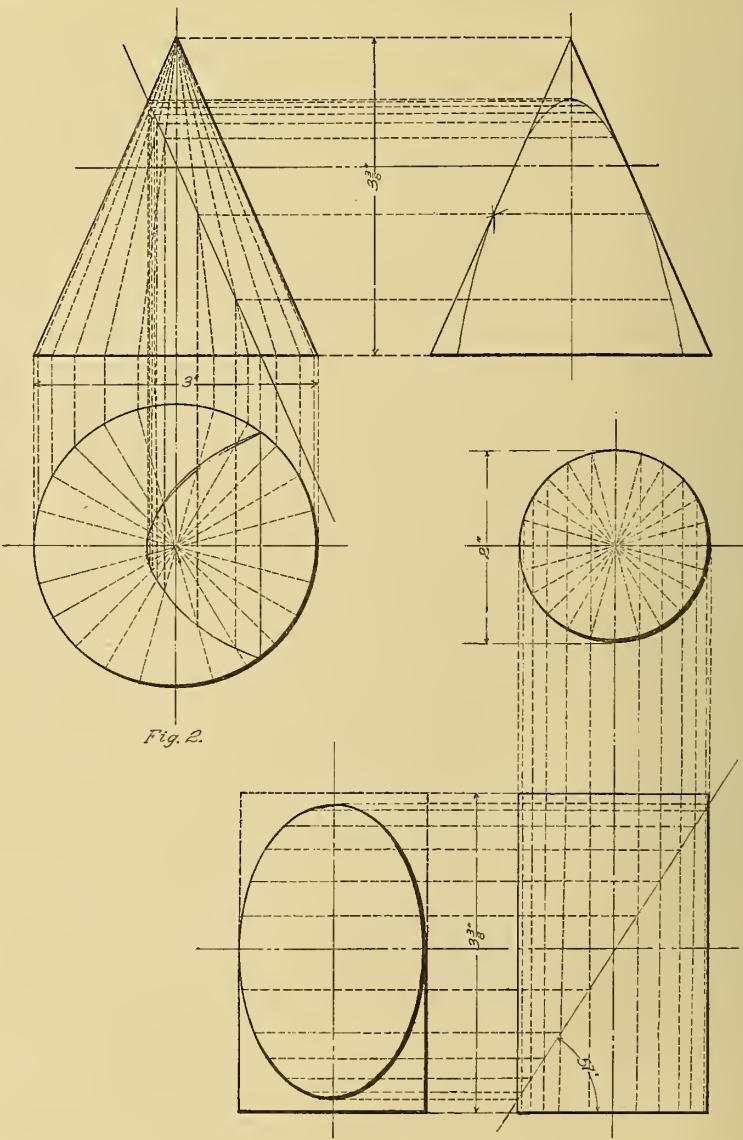


Fig. 2.

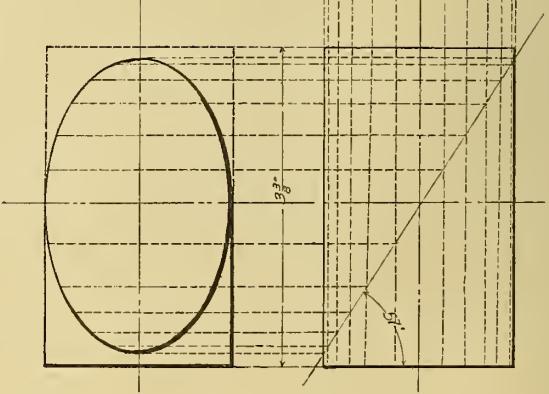


Fig. 3.

Fig. 4.

PLATE XXIV.

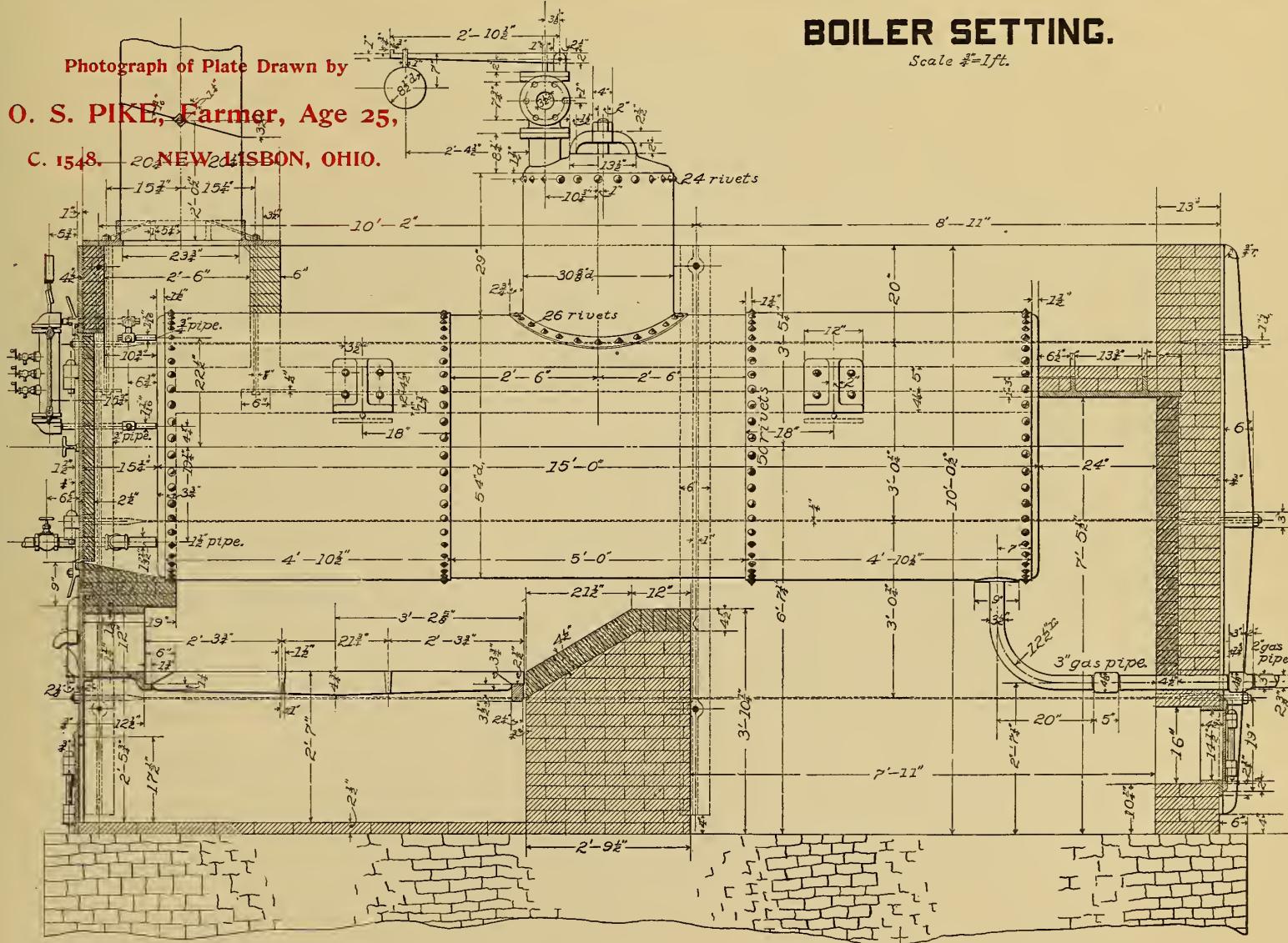
BOILER SETTING.

Scale $\frac{1}{8}$ "=1 ft.

Photograph of Plate Drawn by

O. S. PIKE, Farmer, Age 25,

C. 1548. 20 NEW LONDON, OHIO.



MARCH 15, 1896.

O. S. PIKE CLASS No. C 1548.

PLATE I

PROBLEM 1: To bisect a straight line

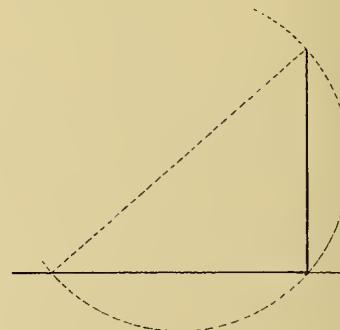
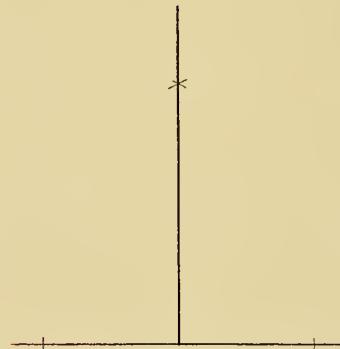
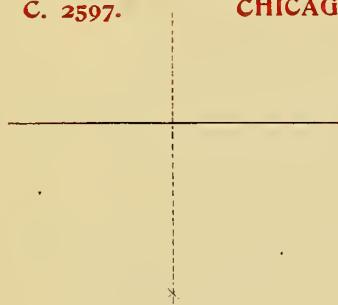
PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line.
CASE I.

CASE II.

Photograph of Plate Drawn by

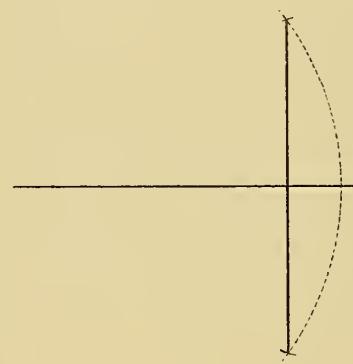
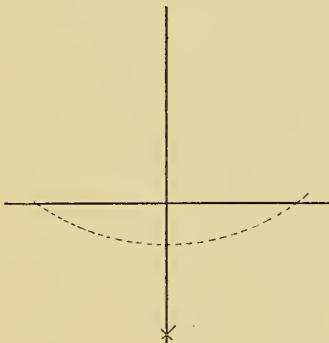
Fred. Kuhlmann, Machinist, Age 31.

880 N. Campbell Avenue,
C. 2597. CHICAGO, ILL.

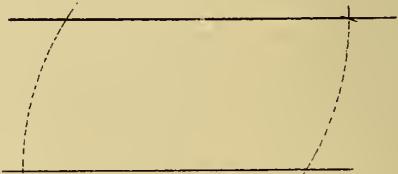


PROBLEM 3: To draw a perpendicular to a straight line from a point without it.
CASE I.

CASE II.



PROBLEM 4: Through a given point to draw a straight line parallel to a given straightline



Photograph of Plate Drawn by
 Fred Kuhlmann, Machinist, Age 31,
 20 Teeth
 880 N. Campbell Avenue,
 PINION.
 Pitch 1" 5.09"
 Pitch 1"
 16 Teeth.

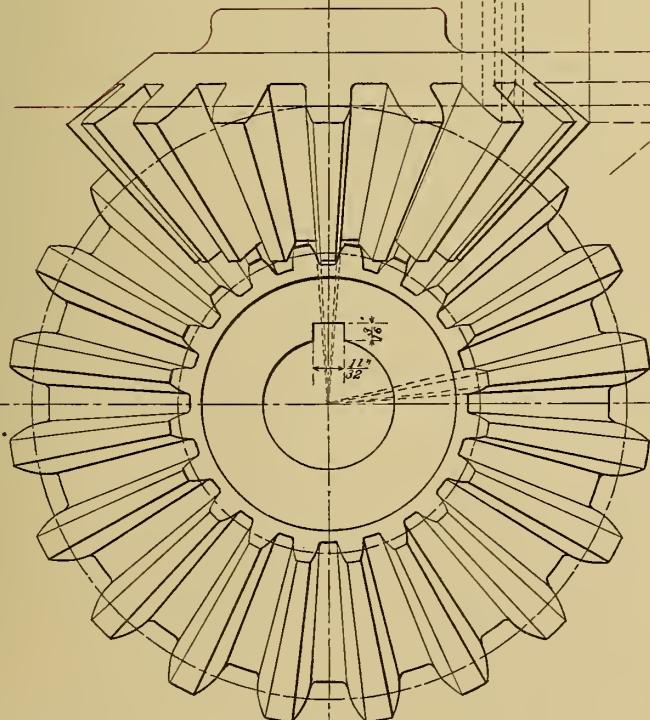


Fig. 2.

BEVEL GEARS.

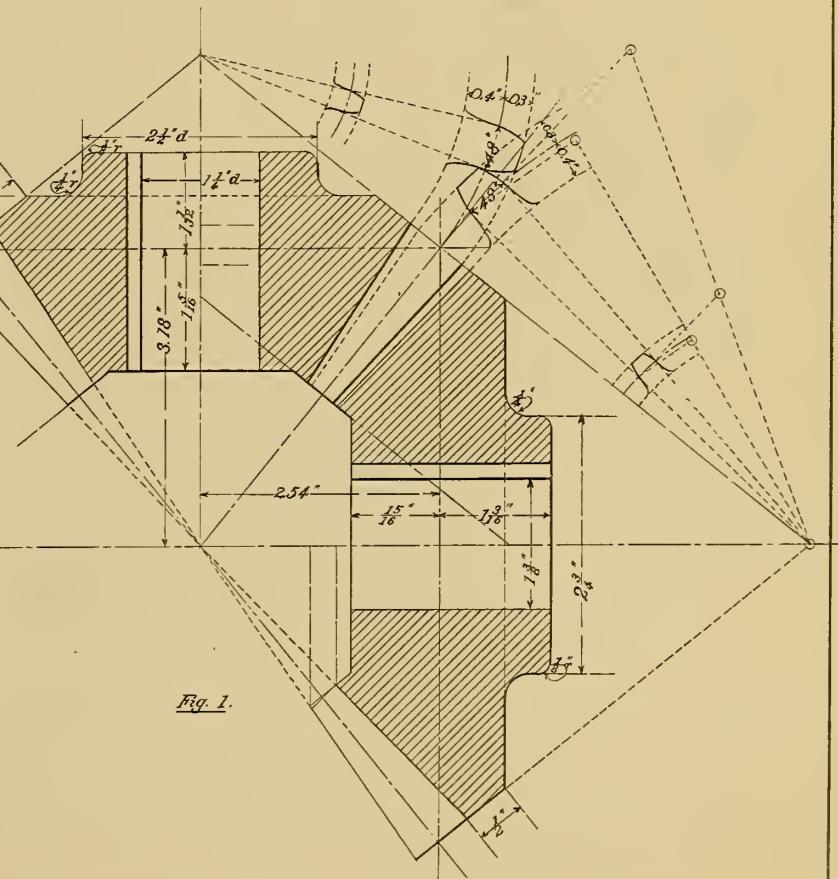
Cast Iron. Full Size.

Fig. 1.

PROBLEM 1: To bisect a straight line

PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line

CASE I.

CASE II.

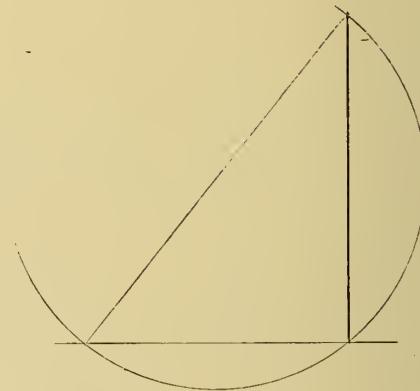
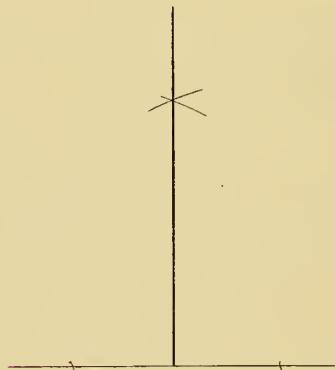
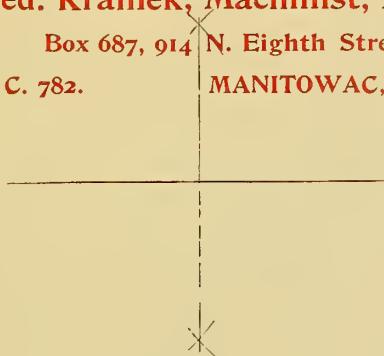
Photograph of Plate Drawn by

Fred. Krainek, Machinist, Age 20,

Box 687, 914 N. Eighth Street,

C. 782.

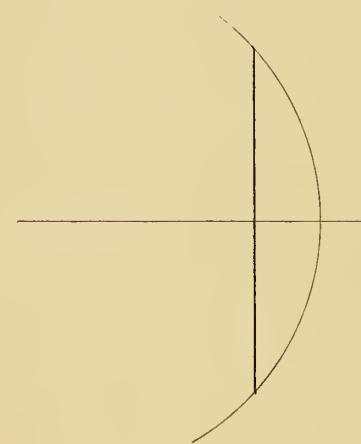
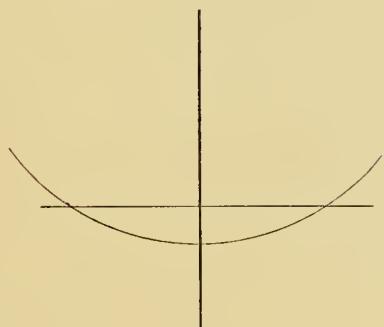
MANITOWAC, WIS.



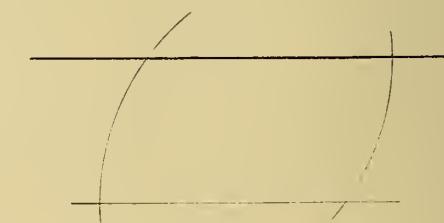
PROBLEM 3: To draw a perpendicular to a point without it

CASE I

CASE II.



PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line



MAY, 18, 1895.

Fred Krainek, CLASS. NO. 782.

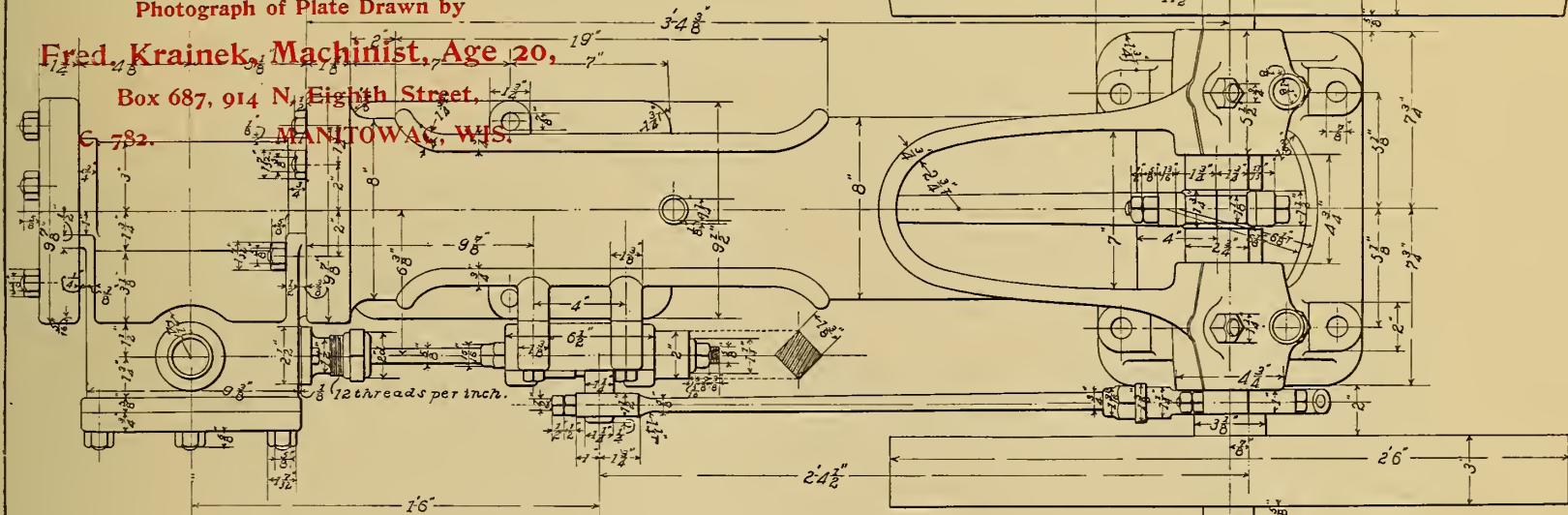
Photograph of Plate Drawn by

Fred Krainek, Machinist, Age 20,

Box 687, 914 N. Eighth Street,

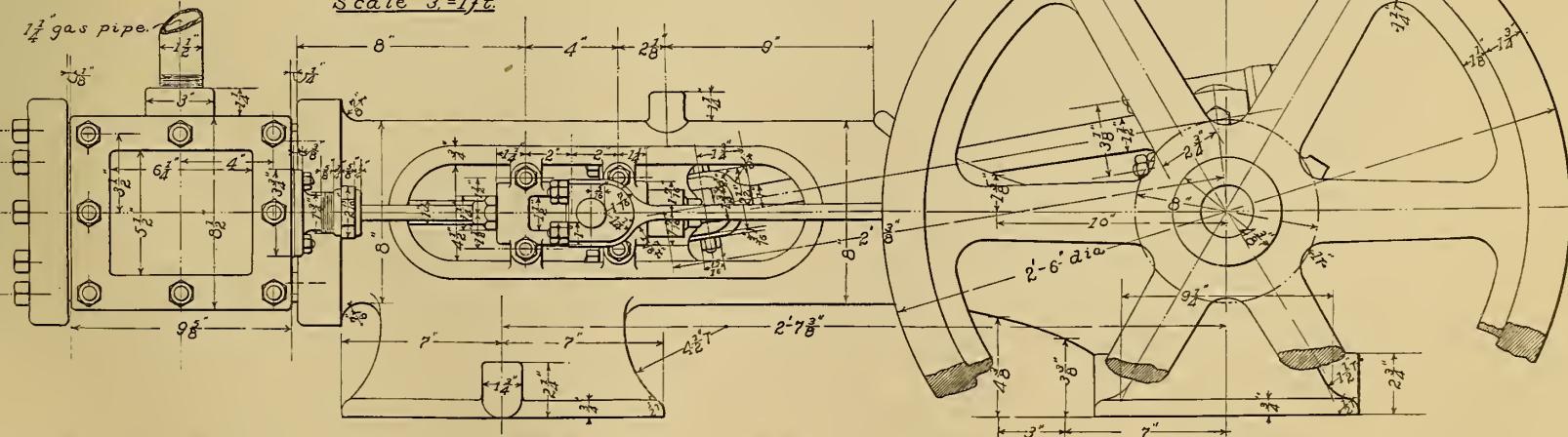
C. 782.

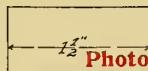
MANITOWAC, WIS.



SIX HORSE POWER HORIZONTAL STEAM ENGINE.

Scale 3" = 1 ft





Photograph of Plate Drawn by

Chas. Kuderer, Machinist, Age 20,

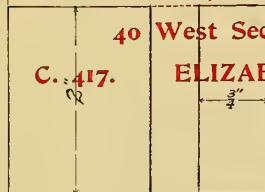


Fig. 1.

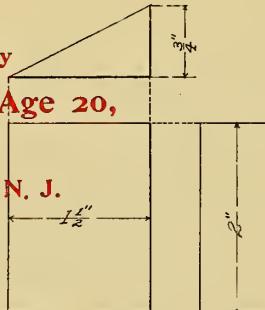


Fig. 2.

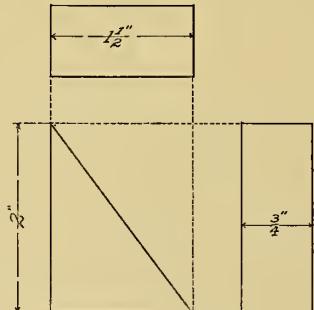


Fig. 3.

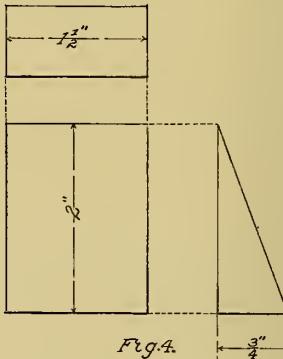


Fig. 4.

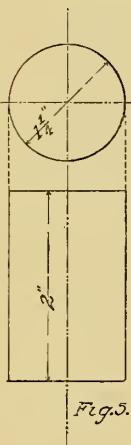


Fig. 5.

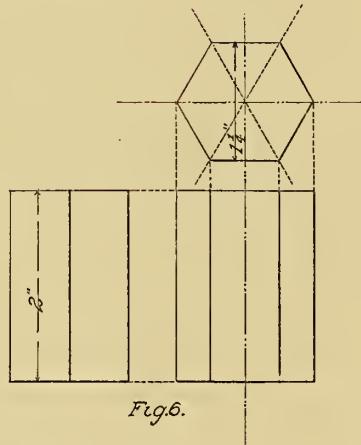


Fig. 6.

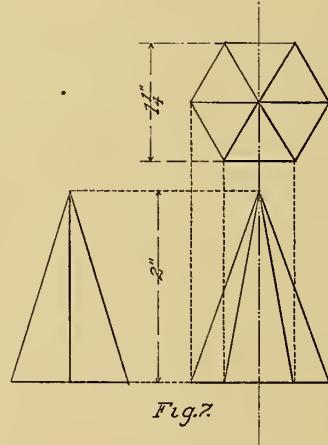


Fig. 7.

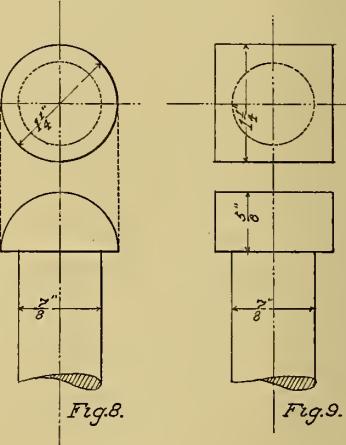


Fig. 8.

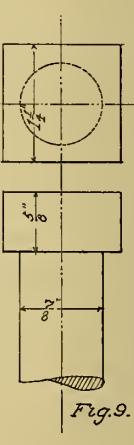


Fig. 9.

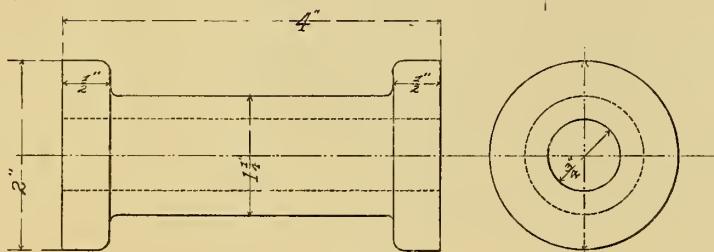


Fig. 10.

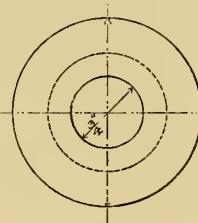


Fig. 11.

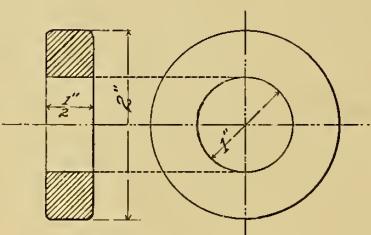


Fig. 12.

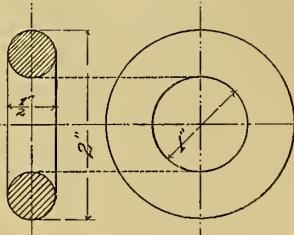


PLATE XXIII.

BOILER SETTING.

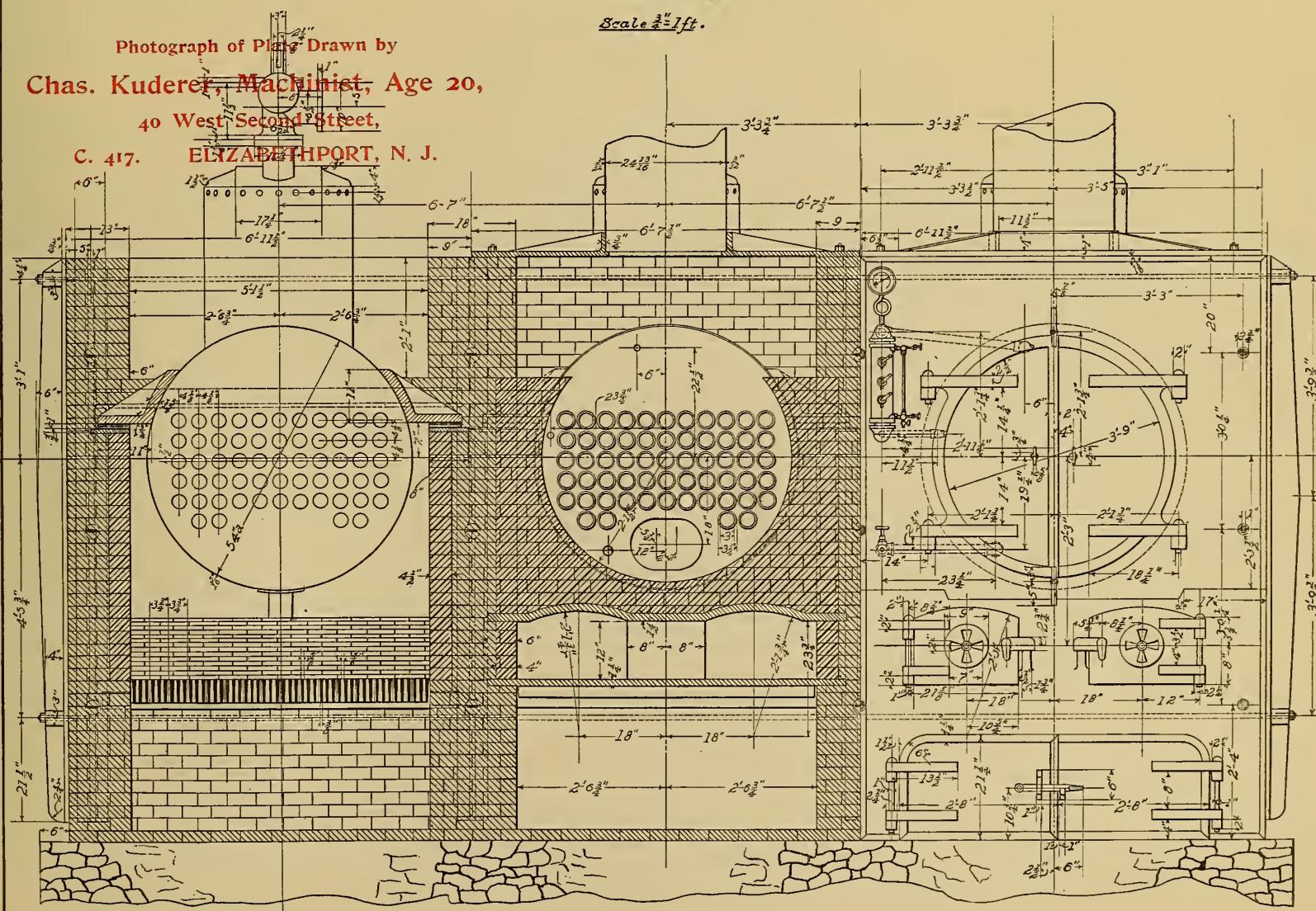
Scale $\frac{3}{4}'' = 1 \text{ ft.}$

Photograph of Plate Drawn by

Chas. Kuderer, Machinist, Age 20,

40 West Second Street,

C. 417. ELIZABETHPORT, N. J.



FEBRUARY 17, 1897.

CHARLES KUDERER, CLASS N° C 417.

PLATE I

PROBLEM 1: To bisect a straight line.

PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line.

CASE I

CASE II

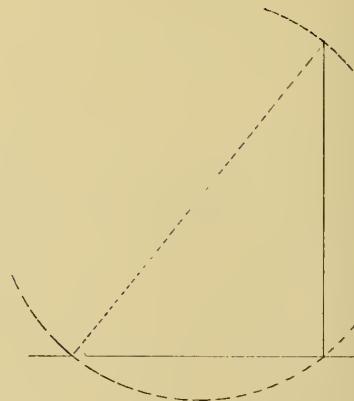
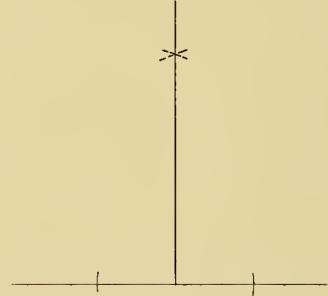
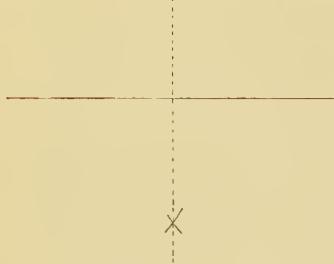
Photograph of Plate Drawn by

G. Wiebe, Jr., Age 24,

Engineer and Fireman,

C. 753.

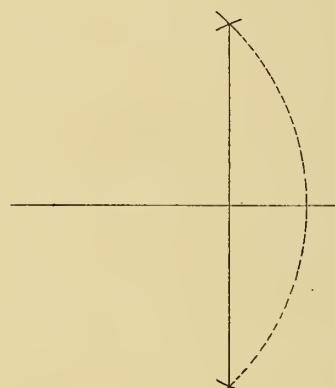
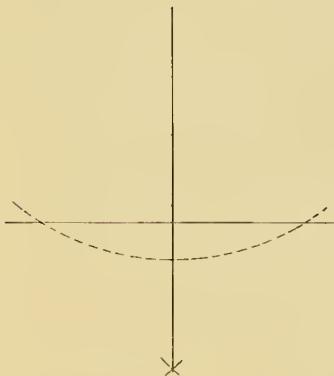
BOX 48, HALSTEAD, KAN.



PROBLEM 3: To draw a perpendicular to a straight line from a point without it.

CASE I

CASE II



PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line.

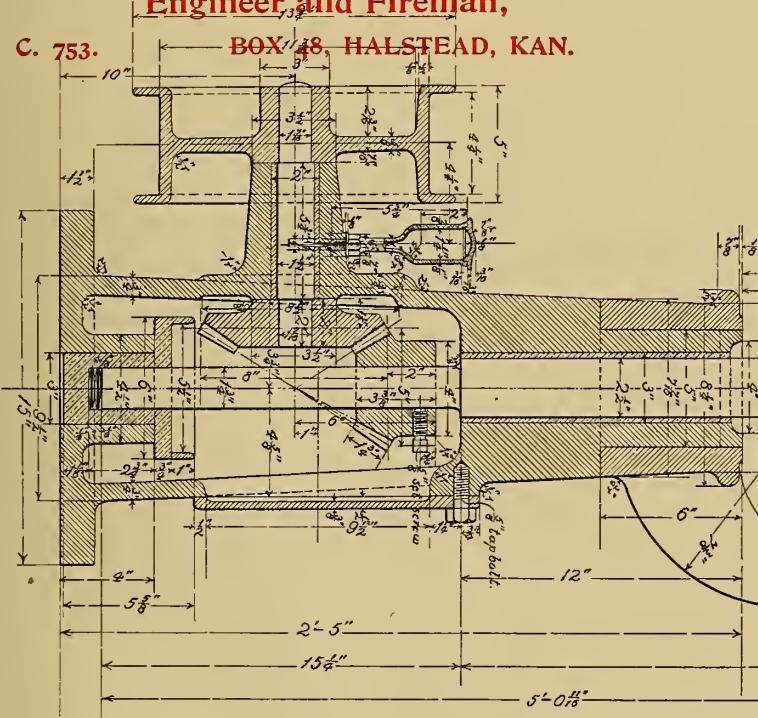


Photograph of Plate Drawn by

G. Wiebe, Jr., Age 24,
Engineer and Fireman,
C. 753. ← BOX 48, HALSTEAD, KAN.

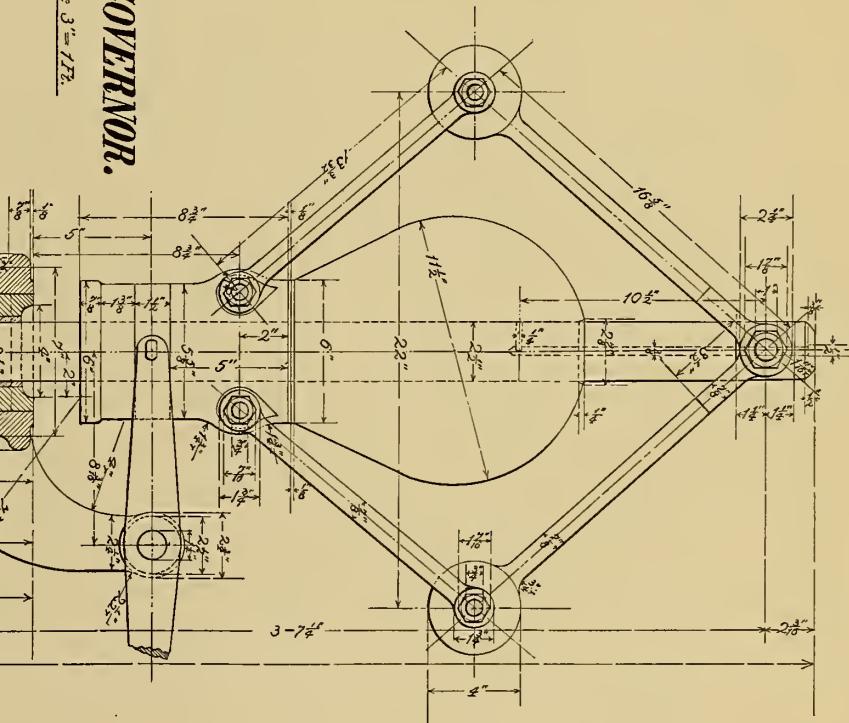
C. 753. ← BOX 48, HALSTEAD, KAN.

1



Scale 3" = 1 F.B.

WEIGHED GOVERNOR.



DEC. 9 1895.

G. WIEBE CLASS NO C 753.



PROBLEM 1:—To bisect a given straight line

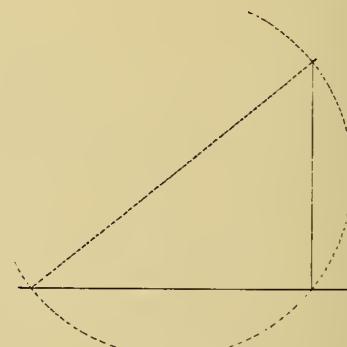
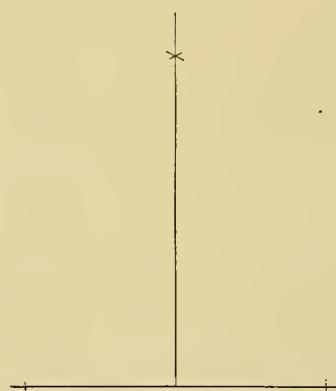
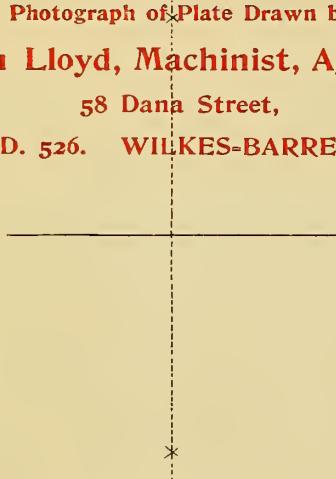
PROBLEM 2:—To draw a perpendicular to a straight line from a given point in that line:

Case I.

Case II.

Photograph of Plate Drawn by

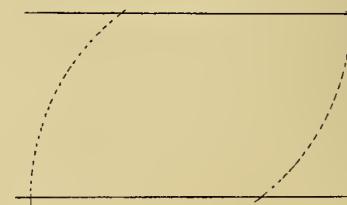
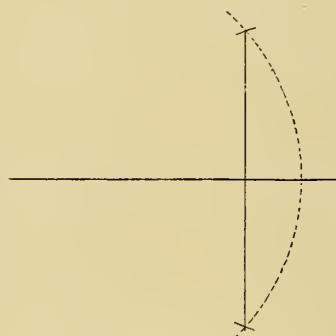
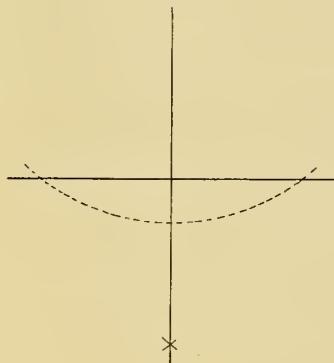
John Lloyd, Machinist, Age 32,
58 Dana Street,
M. D. 526. WILKES-BARRE, PA.



PROBLEM 3: To draw a perpendicular to a straight line from a given point without it:
Case I.

Case II.

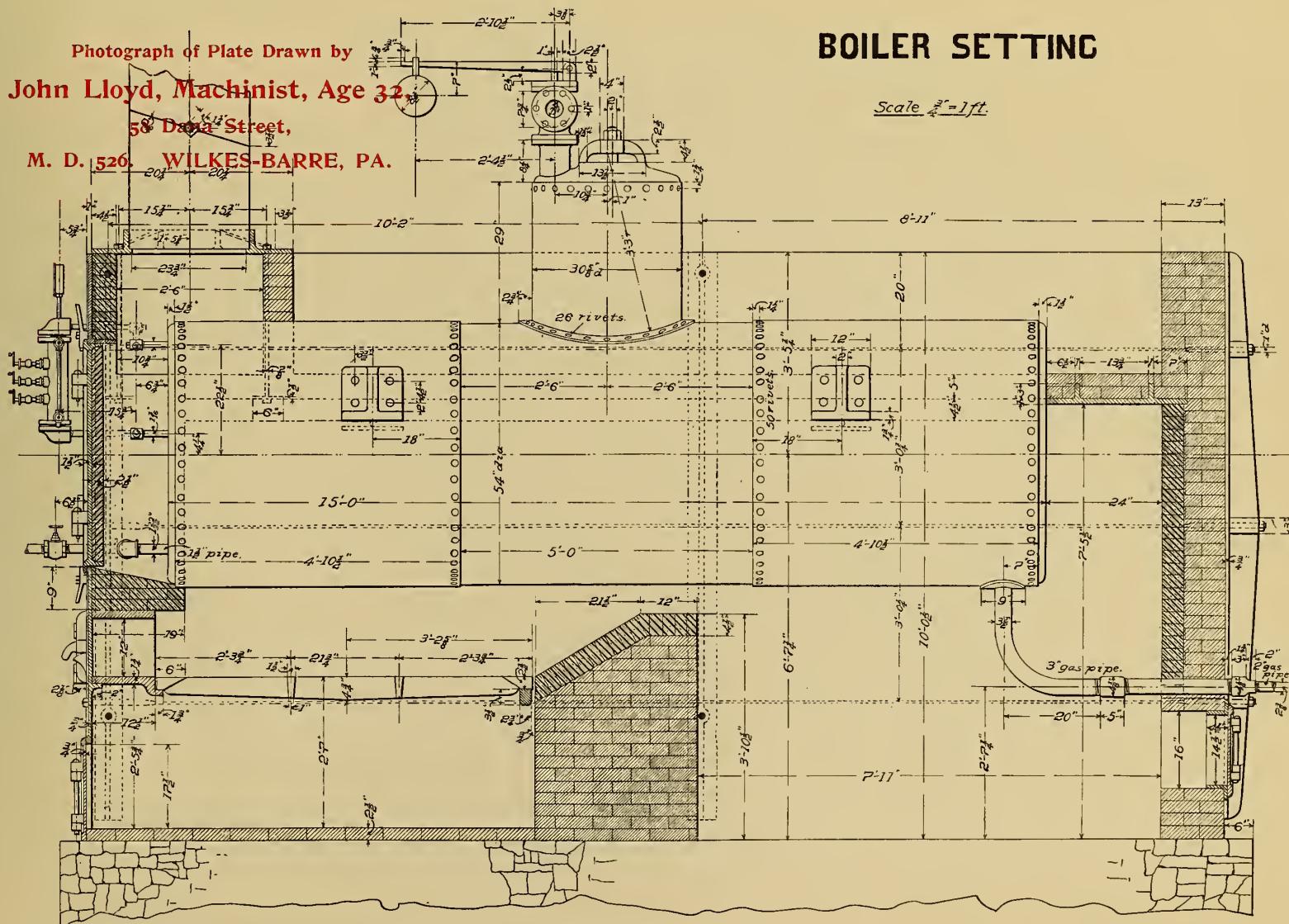
PROBLEM 4:—Through a given point to draw a straight line parallel to a given straight line



BOILER SETTING

Scale $\frac{3}{4}'' = 1\text{ft.}$

Photograph of Plate Drawn by
 John Lloyd, Machinist, Age 32,
 58 Dava Street,
 M. D. 526. WILKES-BARRE, PA.



PROBLEM 1: To bisect a given straight line:

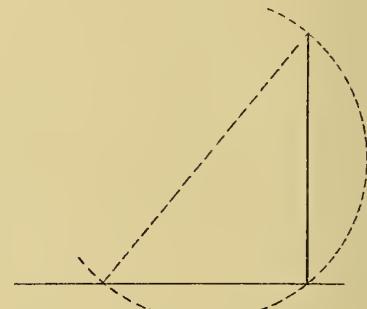
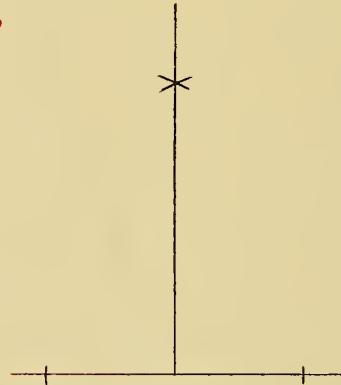
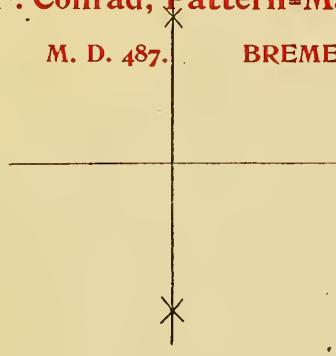
PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line:
CASE I.
CASE II.

Photograph of Plate Drawn by

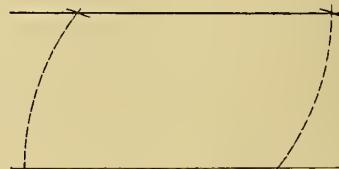
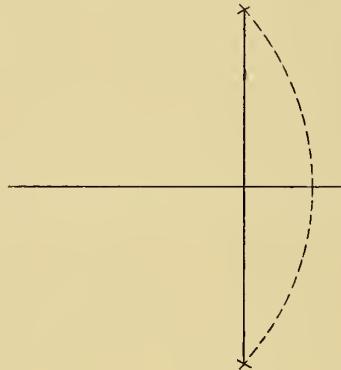
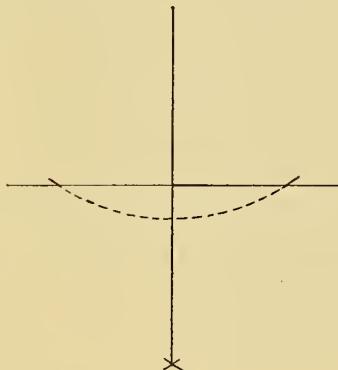
E. F. Conrad, Pattern-Maker, Age 36,

M. D. 487.

BREMEN, IND.

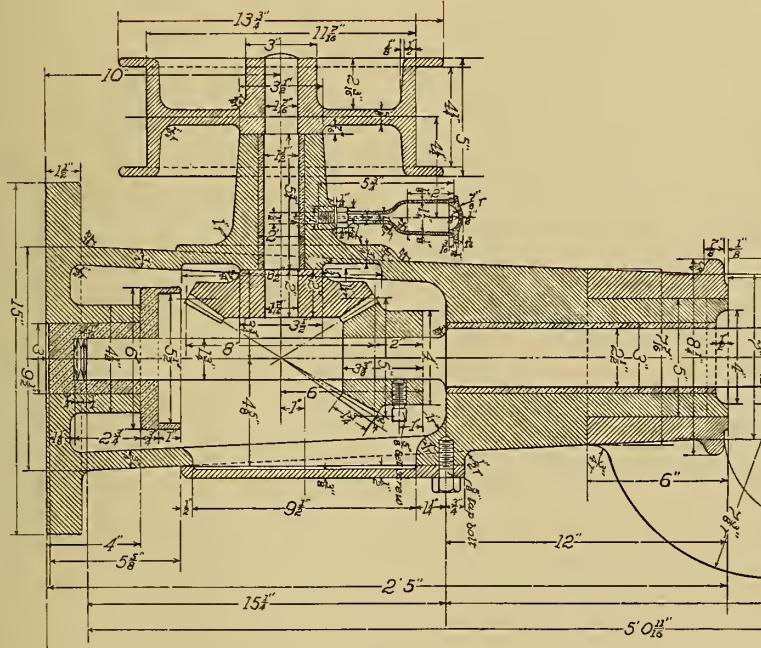
PROBLEM 3: To draw a perpendicular to a straight line from a given point without it:
CASE I.
CASE II.

PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line:



Photograph of Plate Drawn by
E. F. Conrad, Pattern-Maker, Age 36,

M. D. 487. BREMEN, IND.



WEIGHTED GOVERNOR.

Scale 3=1ft.

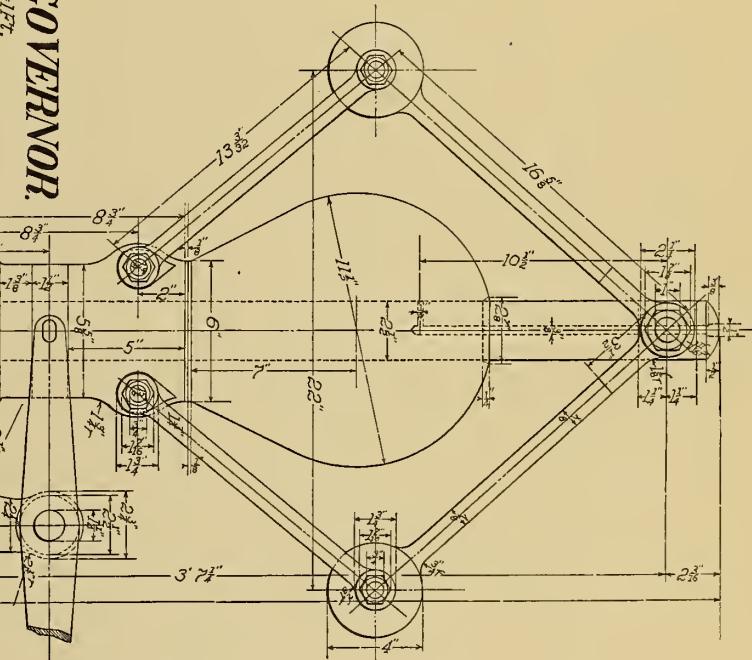
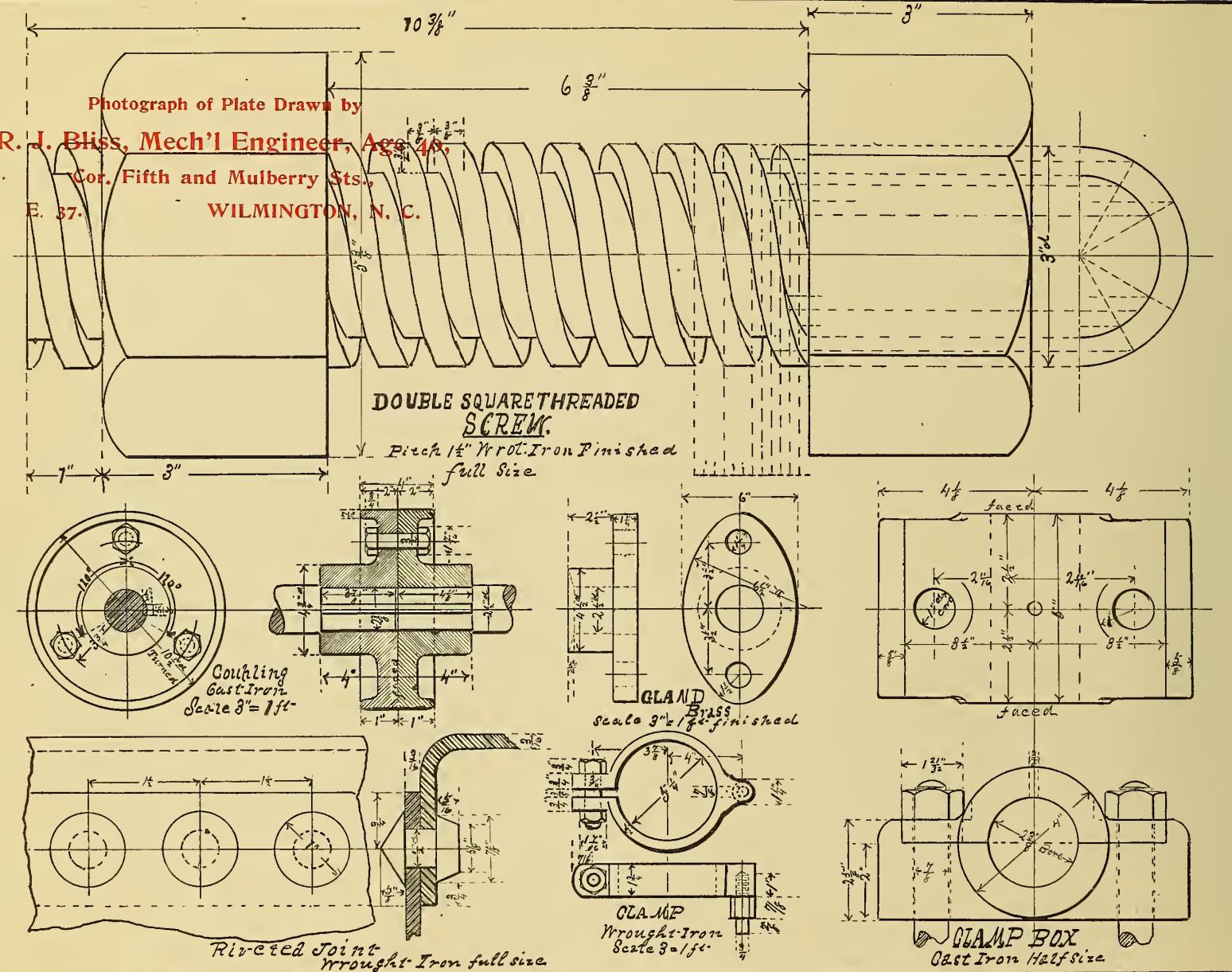


PLATE XI.



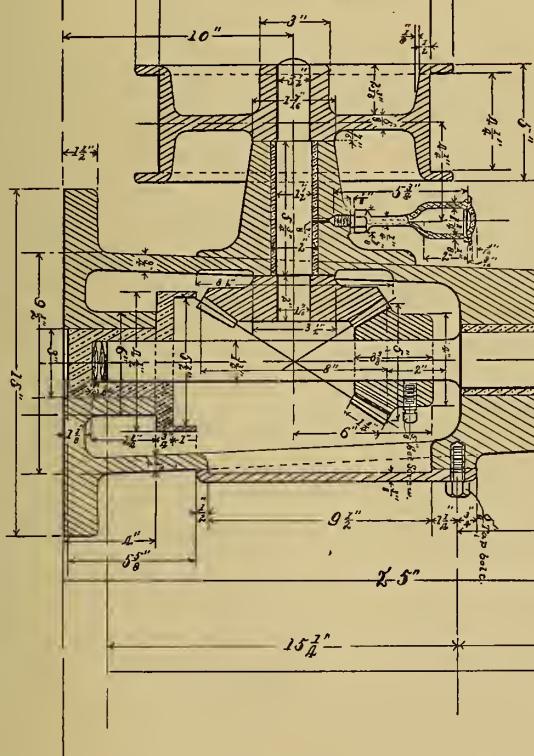
R. J. Bliss Class E. 37.

Photograph of Plate Drawn by

R. J. Bliss, Mech'l Engineer, Age 40,

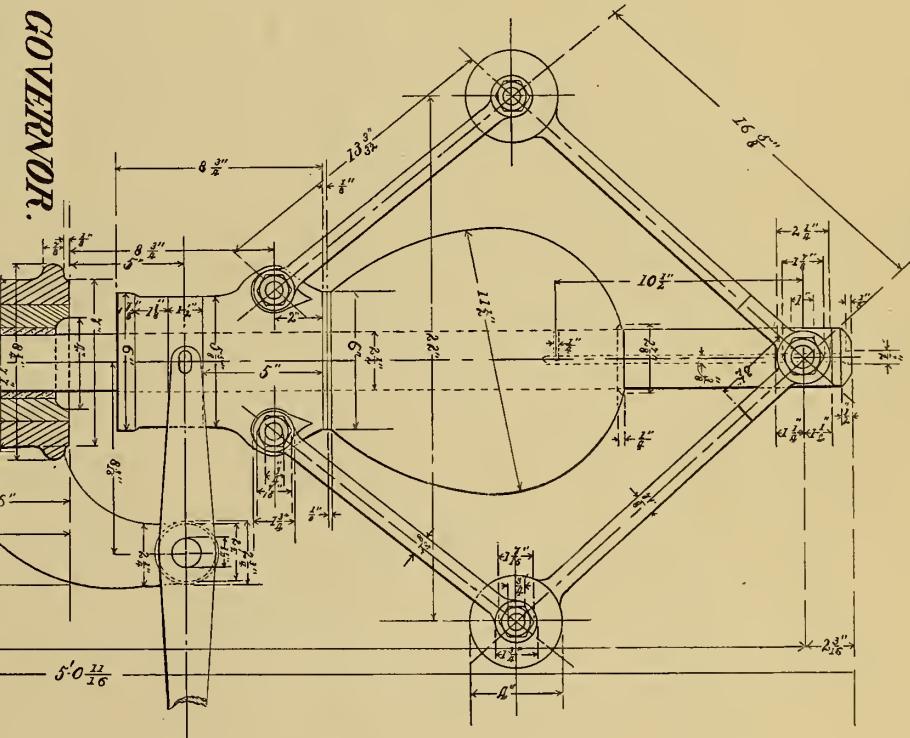
Cor. Fifth and Mulberry Sts.,

E. 37. WILMINGTON, N. C.



WEIGHTED GOVERNOR.

Scale 3" = 1 Ft.





PROBLEM 1: To bisect a straight line.

PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line
CASE I.

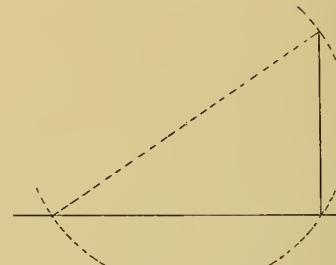
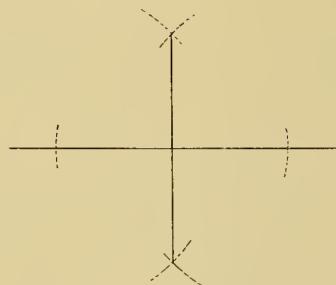
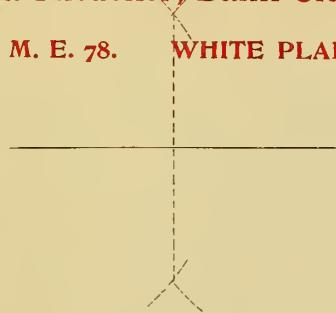
CASE II.

Photograph of Plate Drawn by

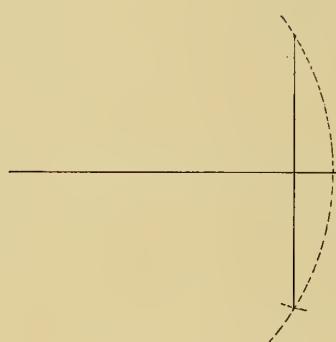
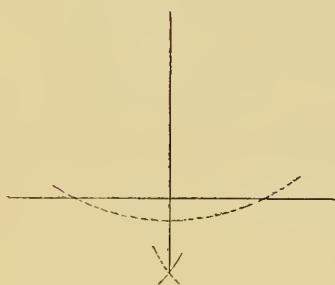
S. E. Snedeker, Bank Clerk, Age 23,

M. E. 78.

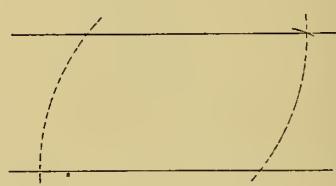
WHITE PLAINS, N. Y.

PROBLEM 3: To draw a perpendicular to a straight line from a point without it.
CASE I.

CASE II.



PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line.



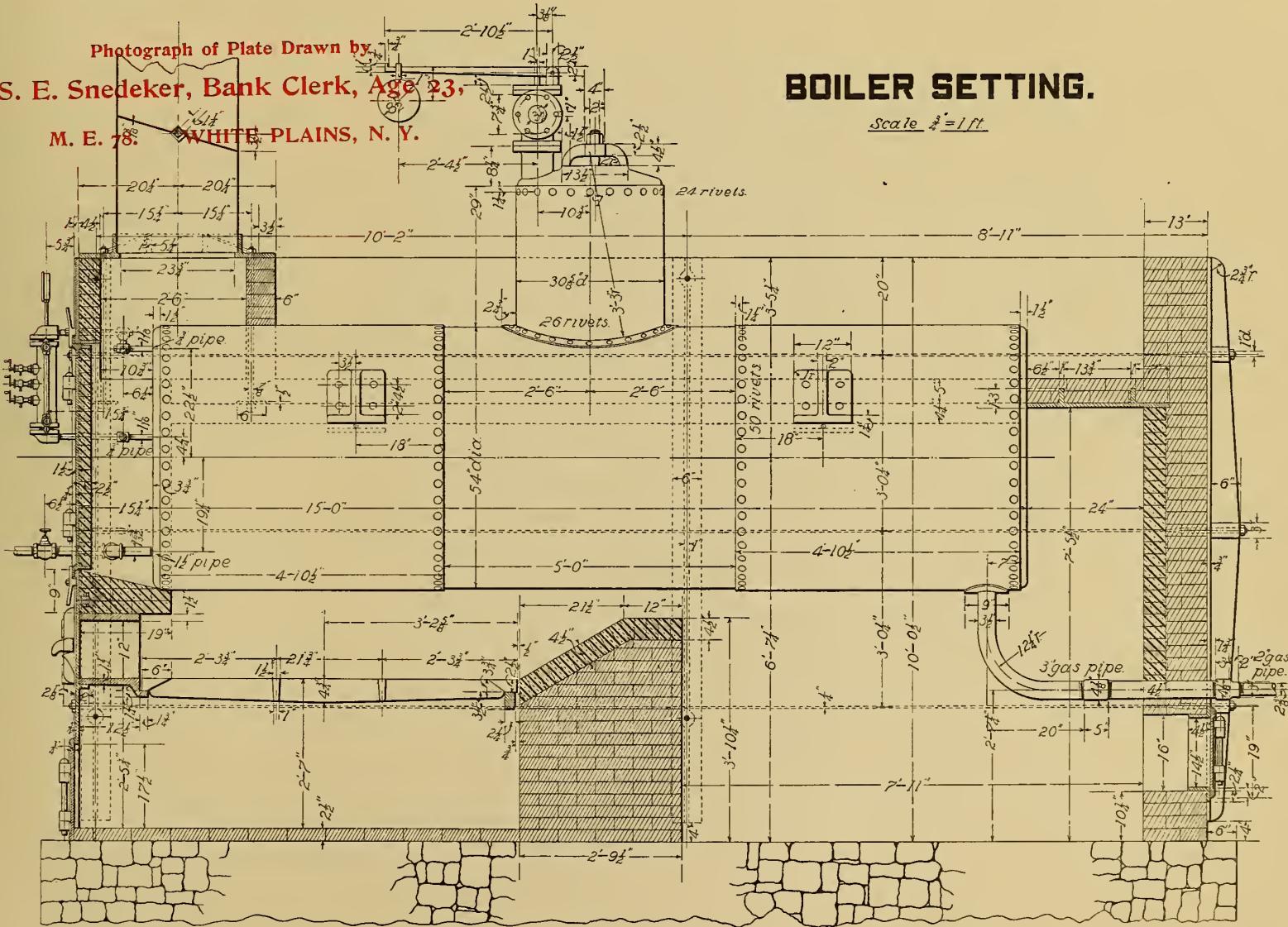
Photograph of Plate Drawn by

S. E. Snedeker, Bank Clerk, Age 23,

M. E. 78. ~~WHITE~~ PLAINS, N. Y.

BOILER SETTING.

Scale $\frac{1}{4}$ in. = 1 ft.



NOVEMBER 19, 1896.

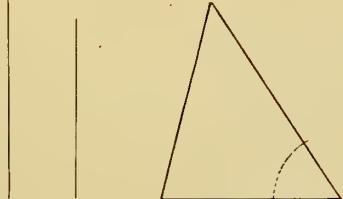
S.E.SNEDEKER, CLASS NO. M.E. 78

PROBLEM 10: Two sides and the included angle of a triangle being given, to construct the triangle.

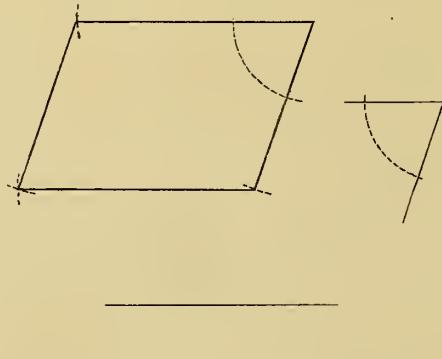
Photograph of Plate Drawn by

E. Thompson, Clerk, Age 29,
69 Schaeffer Street,

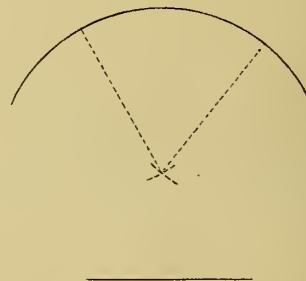
M. E. 1138. BROOKLYN, N. Y.



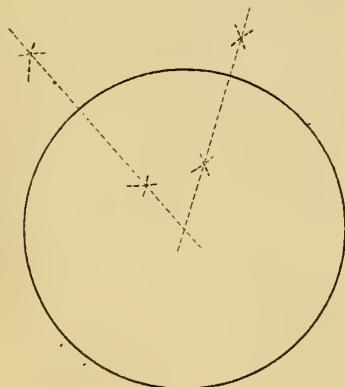
PROBLEM 11: To draw a parallelogram when the sides and one of the angles are given:



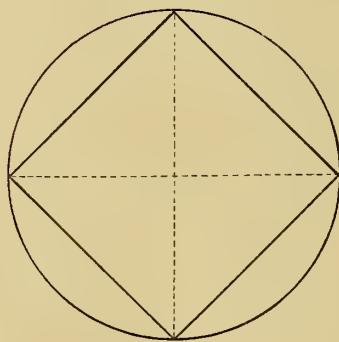
PROBLEM 12: An arc and its radius being given, to find its centre:



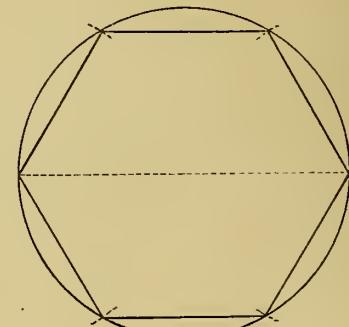
PROBLEM 13: To pass a circumference through any three points not in the same straight line:



PROBLEM 14: To inscribe a square in a given circle:

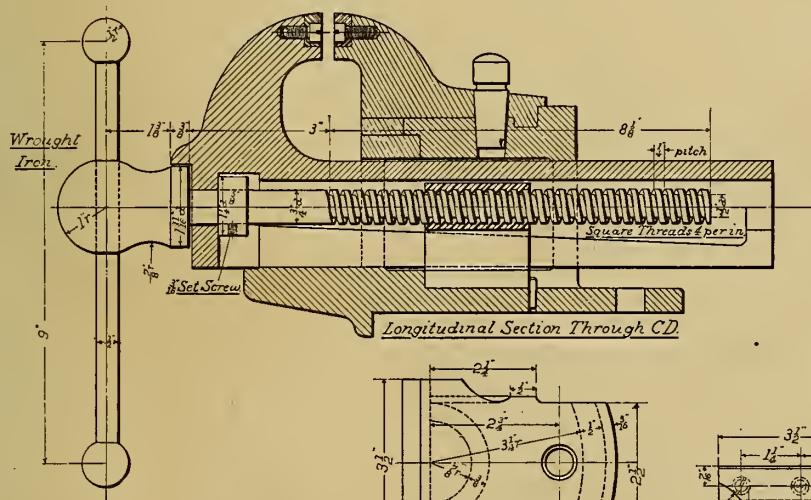


PROBLEM 15: To inscribe a regular hexagon in a given circle:



BENCH VISE.

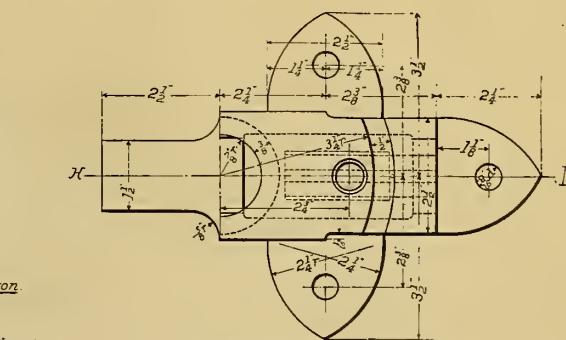
Photograph of Plate Drawn by
E. Thompson, Clerk, Age 29,
69 Schaeffer Street,
M. E. 1138. BROOKLYN, N. Y.



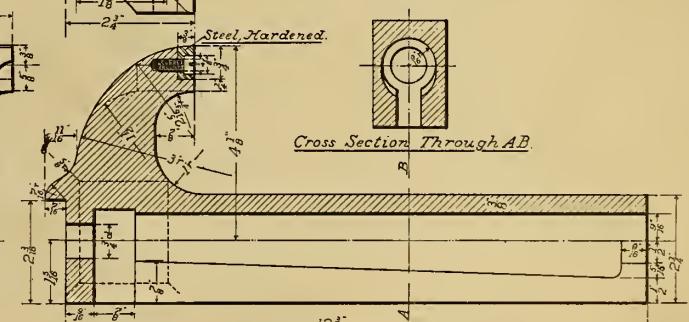
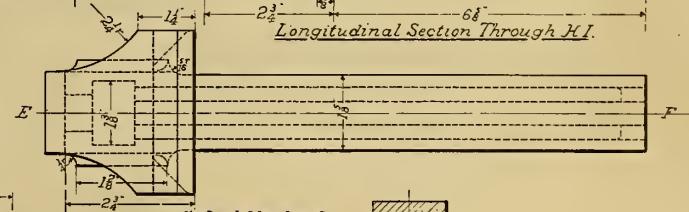
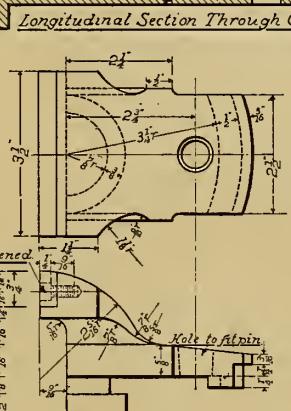
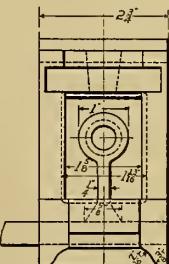
Top View.

Cast Iron

Half Size



Wrought Iron



Longitudinal Section Through EF

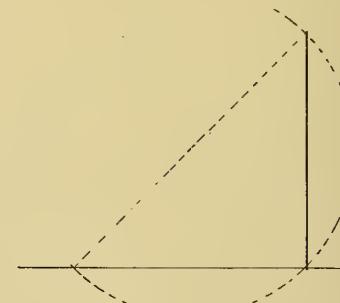
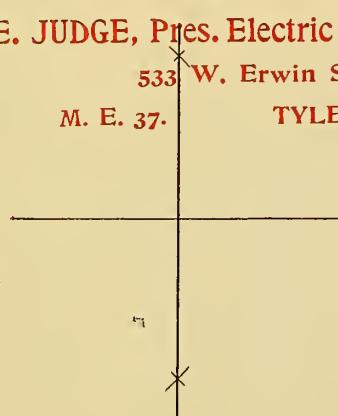
PROBLEM 1: To bisect a straight line.

PROBLEM 2: To draw a perpendicular to a straight line from a given point in that line.
CASE I.

CASE II.

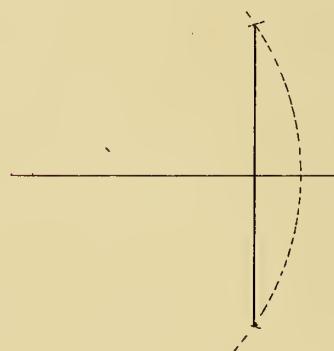
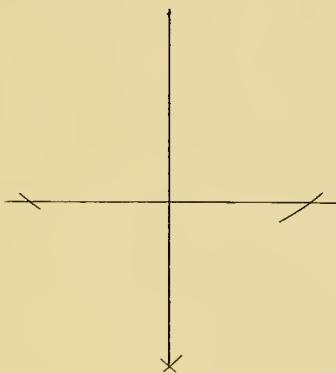
Photograph of Plate Drawn by

A. E. JUDGE, Pres. Electric Light Co., Age 45,

533 W. Erwin Street,
M. E. 37. TYLER, TEXAS.PROBLEM 3: To draw a perpendicular to a straight line from a point without it.
CASE I.

CASE II.

PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line.



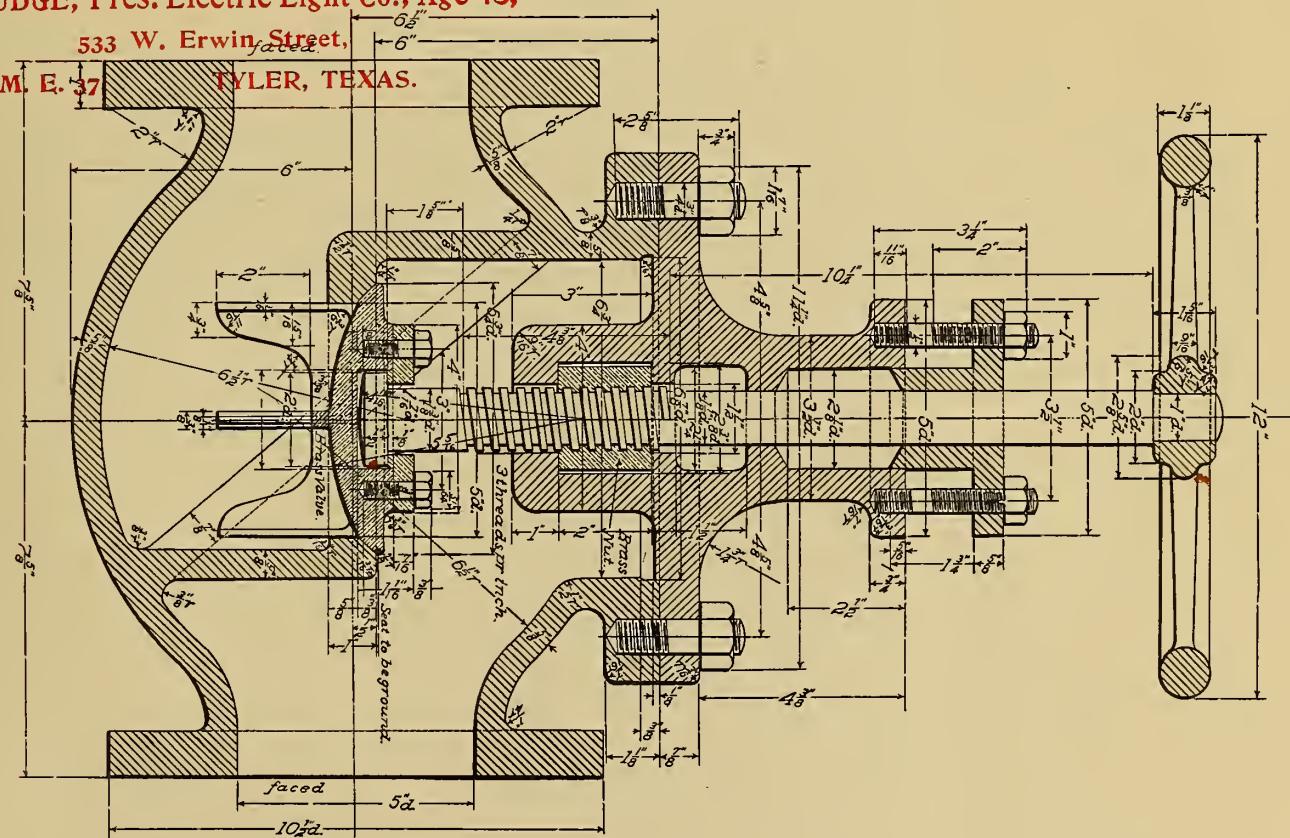
Photograph of Plate Drawn by

A. E. JUDGE, Pres. Electric Light Co., Age 45,

533 W. Erwin Street,

M. E. 37 TYLER, TEXAS.

TYLER, TEXAS.



SINCH GLOBE VALVE.

Cast Iron.

Half Size

MAY 20, 1897.

AE. JUDGE, CLASS ME. 37.

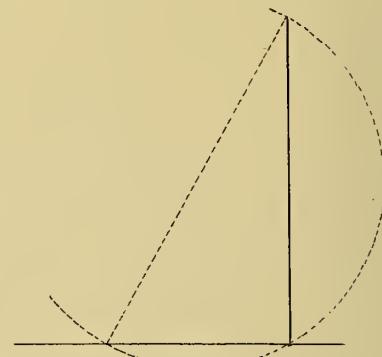
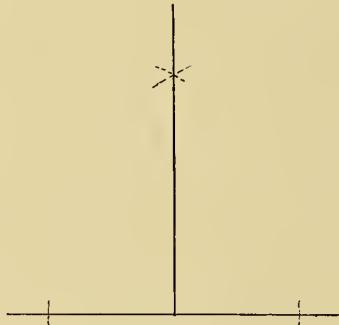
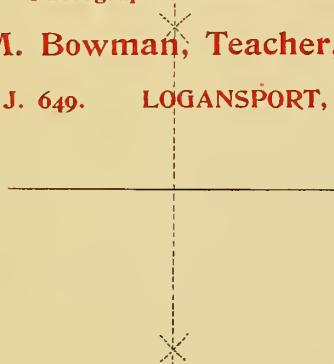
PROBLEM 1: To bisect a straight line.

PROBLEM 2: To Draw a perpendicular to a straight line from a given point in that line.
CASE I.

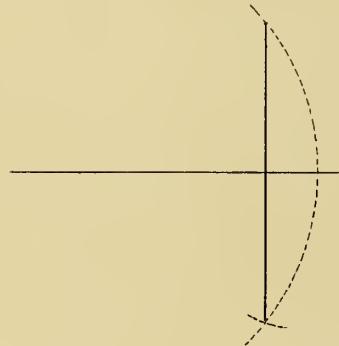
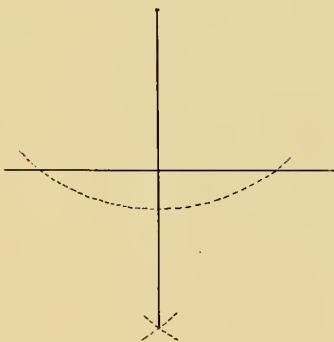
CASE II

Photograph of Plate Drawn by
F. M. Bowman, Teacher, Age 34,

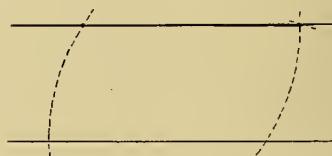
J. 649. LOGANSPORT, IND.

PROBLEM 3: To draw a perpendicular to a straight line from a point without it
CASE I.

CASE II.

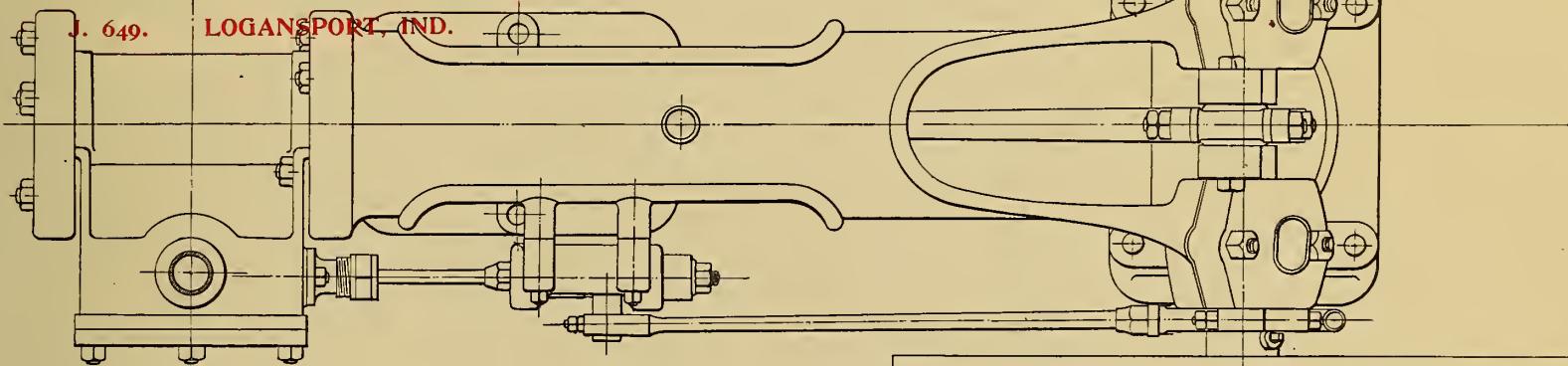


PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line.



Photograph of Plate Drawn by

F. M. Bowman, Teacher, Age 34,



**SIX HORSE POWER
HORIZONTAL STEAM ENGINE.**

Scale 5=1ft.

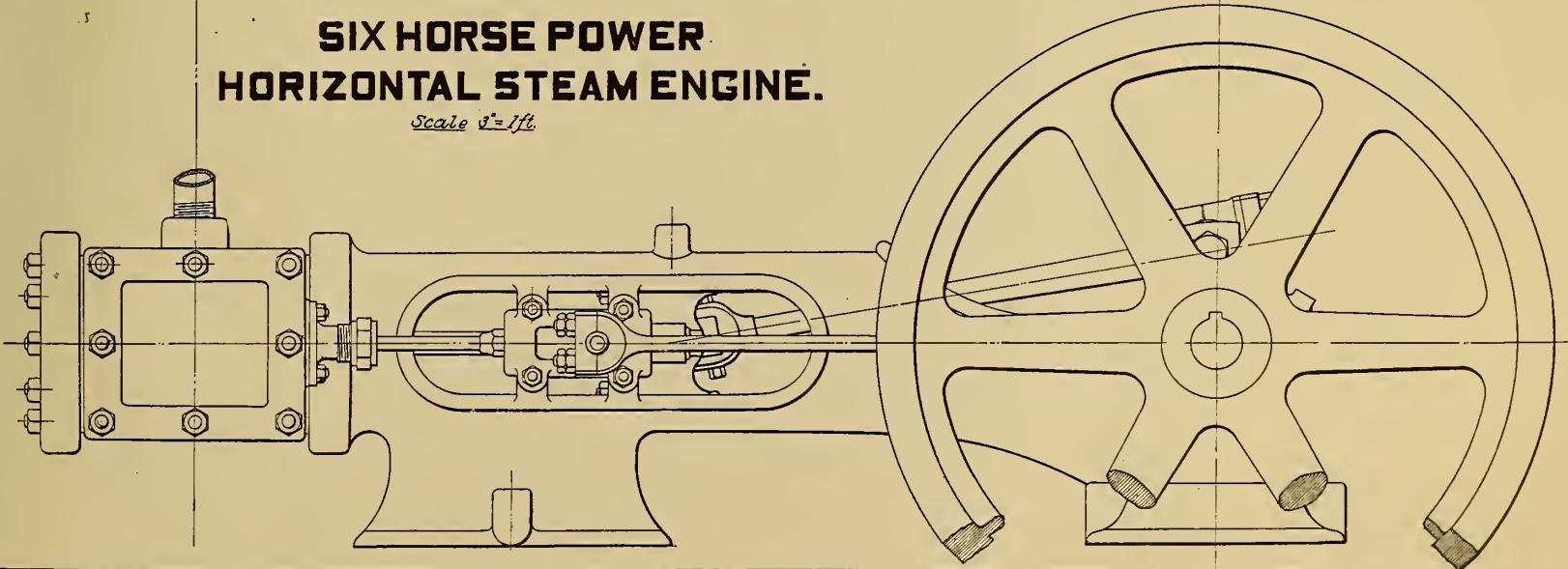




PLATE I.

PROBLEM 1: To bisect a straightline

PROBLEM 2: To draw a perpendicular to a straightline from a given point in that line.
CASE I.

CASE II.

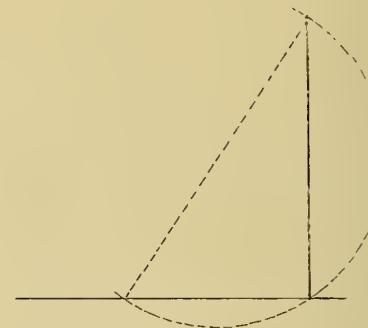
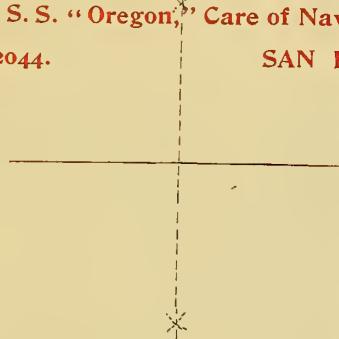
Photograph of Plate Drawn by

Samuel Murray, Fireman, Age 27,

U. S. S. "Oregon," Care of Navy Pay Office,

H. 2044.

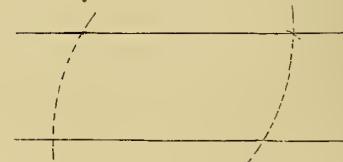
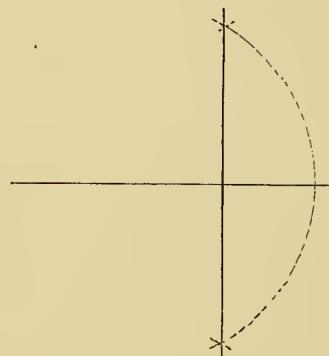
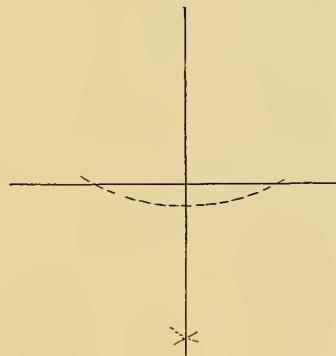
SAN FRANCISCO, CAL.



PROBLEM 3: To draw a perpendicular to a straight line from a point without it
CASE I.

CASE II.

PROBLEM 4: Through a given point to draw a straight line parallel to a given straight line



TRIPLE EXPANSION ENGINE.

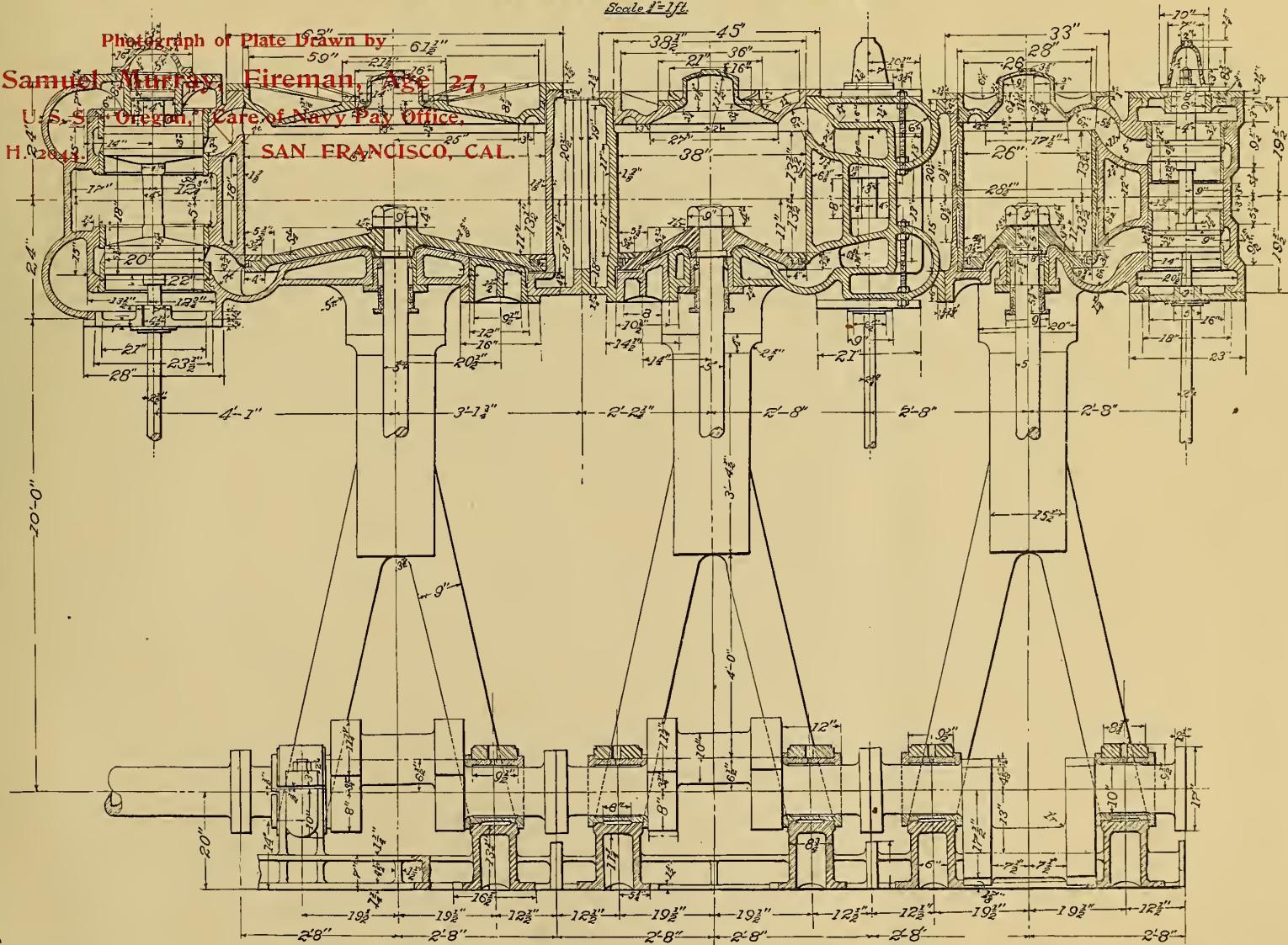
Scale 1"-1 ft.

Photograph of Plate Drawn by

Samuel Murray, Fireman, AGE 27,

U. S. S. "Oregon," Care of Navy Pay Office,
H. 2044.

SAN FRANCISCO, CAL.

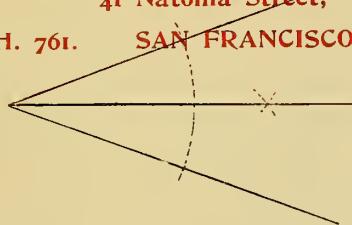


PROBLEMS: To bisect a given angle
CASE 1.

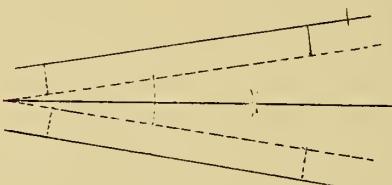
Photograph of Plate Drawn by

J. A. Reed, Marine Engineer, Age 27,

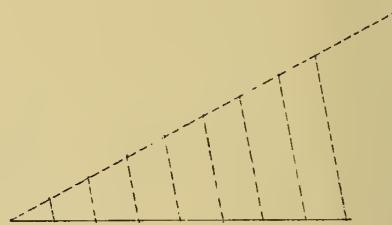
41 Natoma Street,
H. 761. SAN FRANCISCO, CAL.



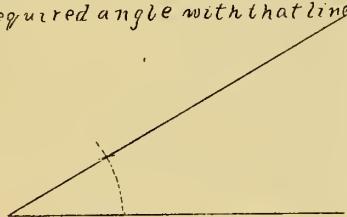
PROBLEM 5: To bisect a given angle



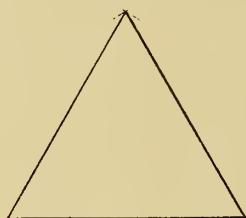
PROBLEM 6: To divide a given straight line into
any required number of equal parts



PROBLEM 7: To draw a straight line through any
given point on a given straight line to make
any required angle with that line



PROBLEM 8: To draw an equilateral triangle,
one side being given



PROBLEM 9: The altitude of an equilateral
triangle being given to draw the triangle

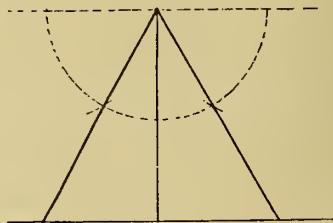
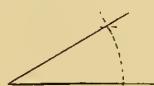


PLATE V.

Problem. 22.—To draw an egg shaped oval

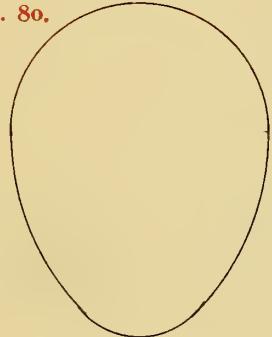
Problem. 23.—To draw an ellipse the diameters being given:

Problem. 24.—To draw an ellipse with circular arcs.

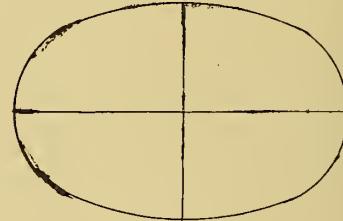
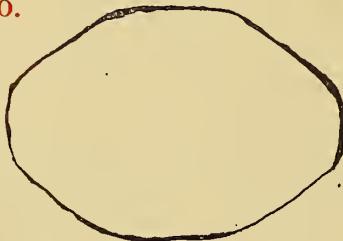
Photograph of Plate Drawn by

R. Hallum, Age 22,
Hoisting Engineer,

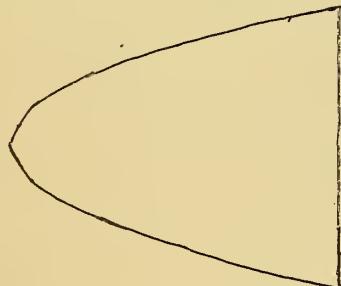
M. 80.



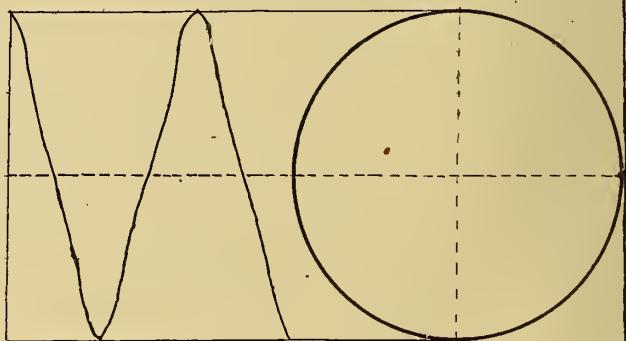
DESLOGE, MO.



Problem. 25.—To draw a parabola the axis and longest double ordinate being given



Problem. 26.—To draw a neck the pitch and the diameter being given



JAN. 9. 1894.

ROBT HALLUM. CLASS. NO. 80

PLATE XII.

4'-5" SHEAVE

Scale 3" = 1 ft.

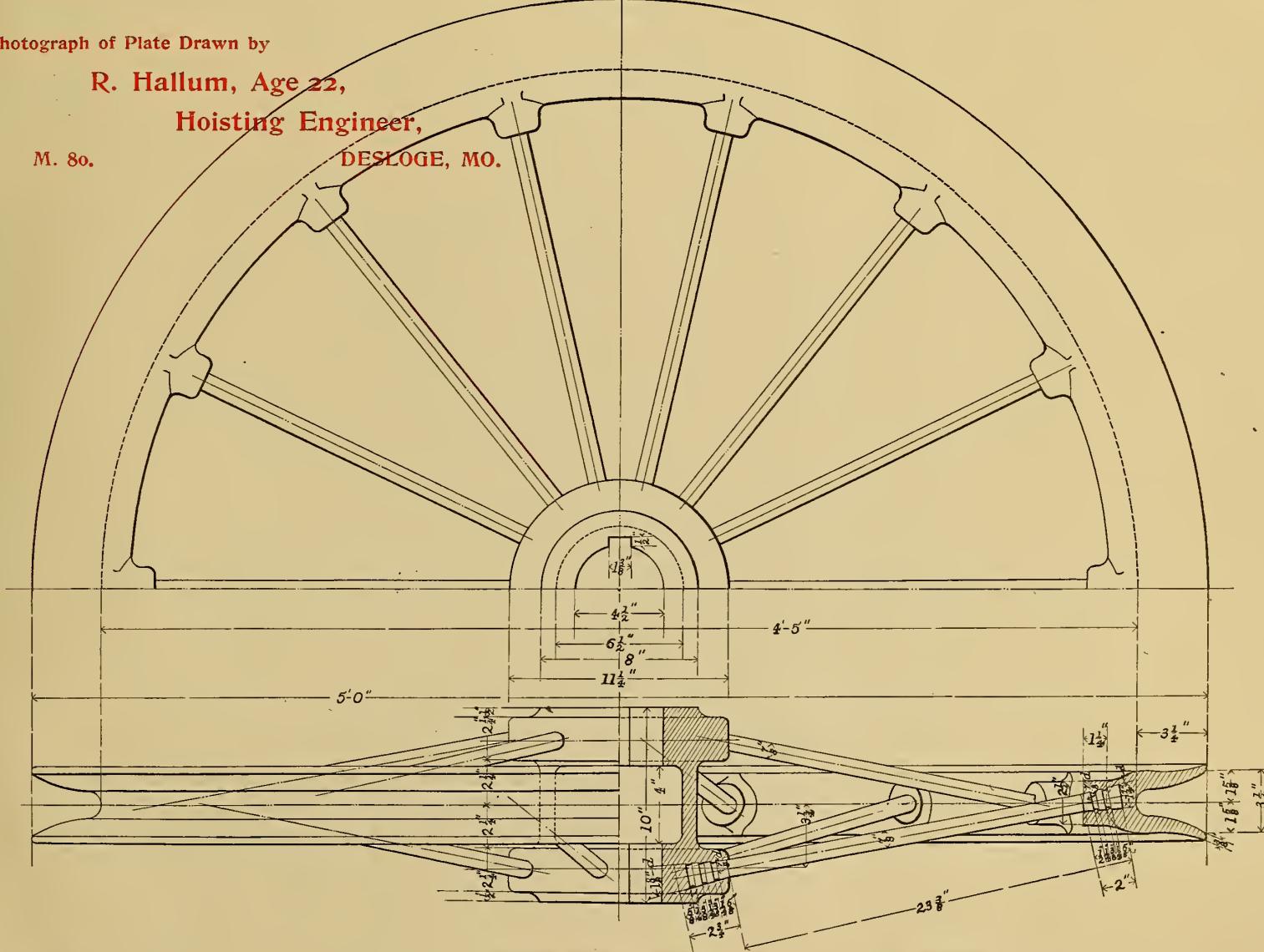
Photograph of Plate Drawn by

R. Hallum, Age ~~22~~,

~~Hoisting Engineer,~~

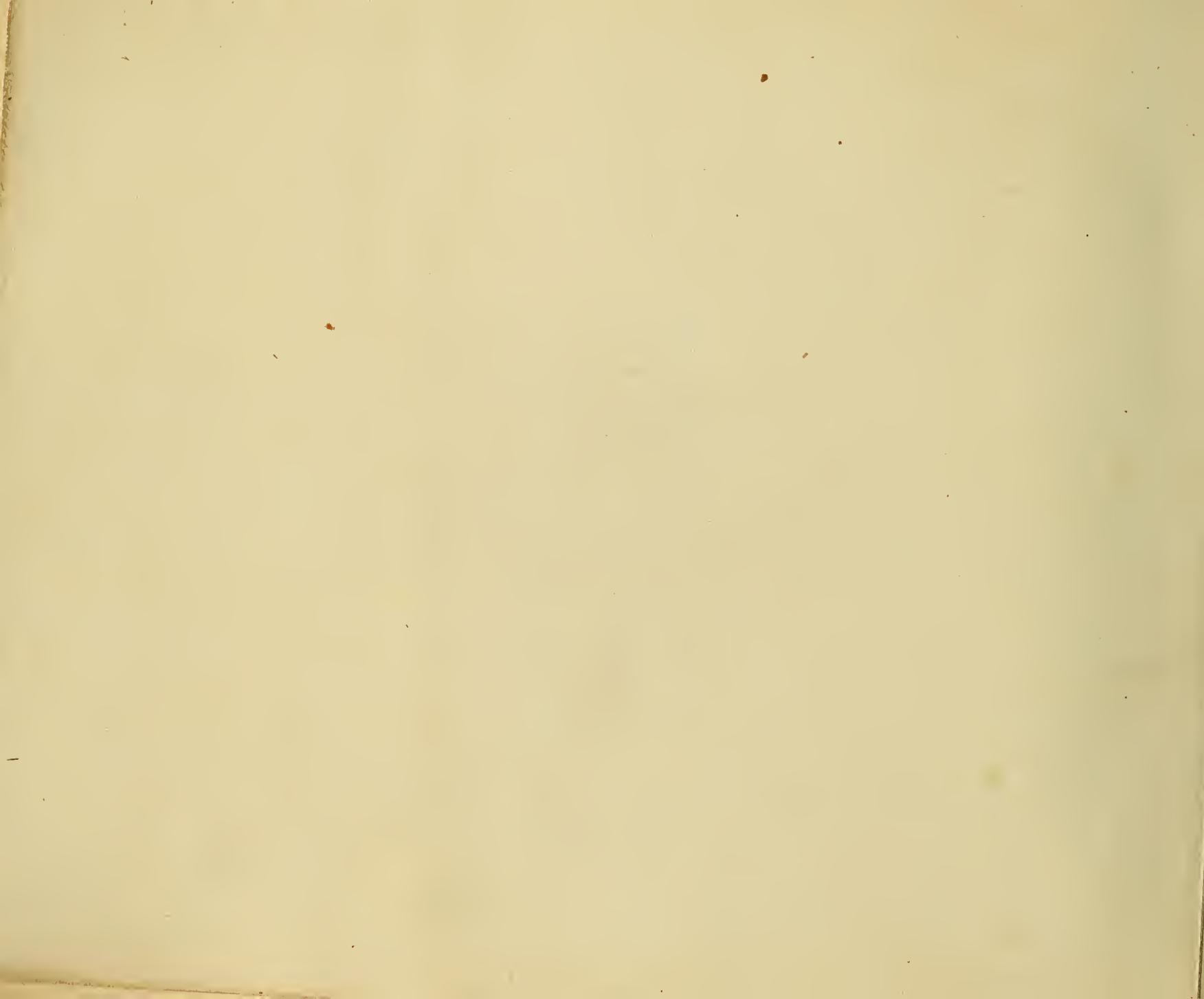
M. 80.

~~DESLOGE, MO.~~



SEPT. 30 1894

ROBT HALLUM CLASS NO 80







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